S. Hrg. 102-24

COMPREHENSIVE URANIUM ACT OF 1991

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY RESEARCH AND DEVELOPMENT

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

ON

S. 210

TO ESTABLISH THE UNITED STATES ENRICHMENT CORPORATION TO OPERATE THE FEDERAL URANIUM ENRICHMENT PROGRAM ON A PROFITABLE AND EFFICIENT BASIS IN ORDER TO MAXIMIZE THE LONG TERM ECONOMIC VALUE TO THE UNITED STATES, TO PROVIDE ASSISTANCE TO THE DOMESTIC URANIUM INDUSTRY AND TO PROVIDE A FEDERAL CONTRIBUTION FOR THE RECLAMATION OF MILL TAILINGS GENERATED PURSUANT TO FEDERAL DEFENSE CONTRACTS TO ACTIVE URANIUM AND THORIUM PROCESSING SITES

MARCH 7, 1991

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COMPREHENSIVE URANIUM ACT OF 1991

THURSDAY, MARCH 7, 1991

U.S. Senate,
Subcommittee on Energy Research and Development,
Committee on Energy and Natural Resources,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:05 p.m., in room SD-366, Dirksen Senate Office Building, Hon. Wendell H. Ford, presiding.

OPENING STATEMENT OF HON. WENDELL H. FORD, U.S. SENATOR FROM KENTUCKY

Senator Ford. Good afternoon, ladies and gentlemen. We are expecting Congressman McEwen shortly, and we have called this hearing today primarily at the request of Senator Wallop. And I had hoped he could be here, and he will be here. At least he is on his way. As it happens to us so many times around here, we get two or three things going at the same time. And so I am going to finish my statement.

Senator Domenici has played a great role in this piece of legislation, it would not have passed without him and so I am grateful he is here today. He may have a few gems and pearls he would like to say, and we will get those out of the way.

Our hearing today is on S. 210, my bill to restructure the Department of Energy's uranium enrichment enterprise. S. 210 is also found in title XIV of S. 341, the Johnston-Wallop energy bill.

We have been over this ground many times before. S. 210 is virtually identical to bills reported by this committee and passed by the Senate five times over the past 4 years. Each time the bill failed because the House refused to act.

We keep trying, because the enrichment enterprise is too important to let fail. It is important to our energy security because it is the only domestic source of fuel for nuclear power. It is important for national security because it is the only source of fuel for the Navy's nuclear submarines. It is important to our balance of trade because it brings into the Treasury half a billion dollars per year from foreign customers. It also keeps $1 billion per year of American consumers' money in this country.

The problem is that the Department of Energy is trying to run a commercial business under rules established nearly 30 years ago. Those rules assume that DOE has a monopoly. In fact, it faces severe competition. In less than 20 years DOE's market share has fallen from 100 percent to 45 percent. Unless something is done, and the Department of Energy, I think, recognizes this and their testimony will relate this, and if something is done soon, it will lose the rest. The long term contracts that now bind customers to DOE will expire over the next several years.

The enrichment enterprise faces serious challenges. It needs to become more competitive to stave off efforts by the Soviet Union and the Europeans to capture its customers. It needs to get on with the deployment of AVLIS to remain competitive in the 21st century. It needs to start accumulating the funds it will need to decommission its existing enrichment plants at the end of their useful life.

These challenges would sorely try the best run business. They will completely swamp the enterprise if it remains in DOE. We simply must put this business on a firm competitive footing. That is why this bill is so important and why we are here today.

I ask unanimous consent that a statement by the chairman of the committee, Senator Johnston, be included in the record at this point.

[The prepared statement of Senator Johnston and the text of S. 210 follow:]

PREPARED STATEMENT OF HON. J. BENNETT JOHNSTON, U.S. SENATOR FROM LOUISIANA

Good afternoon. I want to congratulate Senator Ford for holding this hearing today on S. 210, the Comprehensive Uranium Act of 1991. I must also congratulate Senator Ford for both his commitment and perseverance. He has taken the lead on this issue, and he has the battle scars to prove it.

The state of the Department of Energy's uranium enrichment program is one of the most important and serious issues within the Committee's jurisdiction. It is an issue of extreme importance to our national security, to our energy security, and to our balance of trade.

This is not a new issue for this Committee. The Senate and this Committee have dealt with the uranium enrichment issue persistently over the last four years. We have argued and debated these issues over and over again.

The problems of Department's uranium enrichment enterprise are calling out for help from the Congress. The uranium enrichment enterprise is essentially a $1.5 billion business operated by the Department. Unfortunately, it is a business headed for collapse.

The Department used to have revenues of over $2 billion annually. The Department used to have a substantial hold on the world market. But today the Department is selling uranium enrichment for twice the spot market price, and it has a little less than half the world market.

The enrichment capacity in the world substantially exceeds the demand for enrichment services. There are large excess inventories being offered for sale, so it is a buyer's market. Unfortunately, the Department has become a high-cost supplier. Major new, lost-cost suppliers are challenging DOE for market share. The biggest such supplier is the Soviet Union.

Changes need to be made in the way the Department does business, so that it can continue to compete for this market. We cannot afford to have this enterprise slip away because of our failure to face up to the changes that need to be made.

S. 210 would restructure the enrichment enterprise as a wholly-owned government corporation and give it the flexibility to operate in a competitive environment. This would eliminate the unnecessary constraints and bureaucratic red tape under which the enterprise now operates. There is precious little time left to take these actions if this enterprise is to survive intact.

By 1995, the Department's long-term contracts will begin to expire. The existence of long-term contracts between the Department and U.S. utilities is the main thing that has kept the enterprise alive for the past several years. As these contracts begin to expire, the utilities will go elsewhere for their supply unless the Department can compete in the marketplace.

We must act now to avoid that collapse. We cannot afford to wait until 1995 when the problem will be even more readily apparent but when it may be too late to recover.

II

102d CONGRESS
1st Session

S. 210

To establish the United States Enrichment Corporation to operate the Federal uranium enrichment program on a profitable and efficient basis in order to maximize the long term economic value to the United States, to provide assistance to the domestic uranium industry and to provide a Federal contribution for the reclamation of mill tailings generated pursuant to Federal defense contracts at active uranium and thorium processing sites.

IN THE SENATE OF THE UNITED STATES

January 15 (legislative day, January 3), 1991

Mr. Ford (for himself, Mr. Johnston, Mr. Wallop, Mr. Domenici, and Mr. McConnell) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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A BILL

To establish the United States Enrichment Corporation to operate the Federal uranium enrichment program on a profitable and efficient basis in order to maximize the long term economic value to the United States, to provide assistance to the domestic uranium industry and to provide a Federal contribution for the reclamation of mill tailings generated pursuant to Federal defense contracts at active uranium and thorium processing sites.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be referred to as the "Comprehensive Uranium Act of 1991".

TITLE I

SEC. 110. SHORT TITLE.—This title may be cited as the "Uranium Enrichment Act of 1991.".

SEC. 111. DELETION OF SECTION 161 v.—Subsection 161 v. of the Atomic Energy Act of 1954, as amended, is deleted and the remaining subsections are relettered accordingly.

SEC. 112. REDIRECTION OF THE URANIUM ENRICHMENT ENTERPRISE OF THE UNITED STATES.—The Atomic Energy Act of 1954, as amended (42 U.S.C. 2011-2296) is further amended by—

a. inserting at the commencement thereof after the words "ATOMIC ENERGY ACT OF 1954":

"TITLE I—ATOMIC ENERGY";

and

b. adding at the end thereof the following:

"TITLE II—UNITED STATES ENRICHMENT CORPORATION

"CHAPTER 21. FINDINGS

"SEC. 1101. FINDINGS.—The Congress of the United States finds that:

"a. The enrichment of uranium is essential to the national security and energy security of the United States.

"b. A competitive, well-managed and efficient enrichment enterprse provides important economic benefits to the United States and contributes to a highly favorable foreign trade balance.

. "c. A strong United States enrichment enterprise promotes United States nonproliferation policies by requiring accountability for United States enriched uranium.

"d. The operation of uranium enrichment facilities must meet high standards for environmental health and safety.

"e. The operation and management of a uranium enrichment enterprise requires a commercial business orientation in order to engender customer support and confidence, and customers, rather than the taxpayers at large, should bear the costs of commercial uranium enrichment services.

"f. The optimal level of expenditures for the uranium enrichment enterprise fluctuates and cannot be accurately predicted or efficiently financed if subject to annual authorization and appropriation.

"g. Flexibility is essential to adapt business operations to a competitive marketplace.

"h. The events of the recent past, including the emergence of foreign competition, have brought new and unforeseen forces to bear upon the management and operation of the Government's uranium enrichment enterprise.

"i. The present operation of the uranium enrichment enterprise must be changed so as to further the national interest in the enterprise and respond to the competitive demand placed upon it by market forces, while continuing to meet the paramount objective of ensuring the Nation's common defense and security.

"CHAPTER 22. DEFINITIONS, ESTABLISHMENT OF CORPORATION AND PURPOSES

"SEC. 1201. DEFINITIONS.—For the purpose of this title:

"a. The term 'Secretary' means the Secretary of Energy.

"b. The term 'Department' means the Department of Energy of the United States.

"c. The term 'Administrator' means the chief executive officer of the United States Enrichment Corporation.

"d. The term 'Corporation' means the United States Enrichment Corporation.

"e. The term 'Corporate Board' means the appointed members of the official advisory panel appointed by the President pursuant to section 1503 of this title.

"f. The term 'uranium enrichment' means the separation of uranium of a given isotopic content into two components, one having a higher percentage of a fissile isotope and one having a lower percentage.

"g. The term 'remedial action' has the same meaning as defined in section 120(24) of the Comprehensive Environmental Response, Compensation and Liability Act.

"h. The term 'decontamination and decommissioning' means those activities undertaken to decontaminate and decommission inactive facilities that have residual radioactive or mixed radioactive and hazardous chemical contamination.

"SEC. 1202. ESTABLISHMENT OF THE CORPORATION.—

"a. There is hereby created a body corporate to be known as the 'United States Enrichment Corporation'.

"b. The Corporation shall—

"(1) be established as a wholly owned Government corporation subject to the Government Corporation Control Act, as amended (31 U.S.C. 9101–9109), except as otherwise provided herein; and

"(2) be an agency and instrumentality of the United States.

"SEC. 1203. PURPOSES.—The Corporation is created for the following purposes—

"(1) to acquire feed material for uranium enrichment, enriched uranium, the Department's uranium previously set aside for commercial purposes, and the Department's uranium enrichment and related facilities;

"(2) to operate, and as required by business conditions, to expand or construct facilities for uranium enrichment or both;

"(3) to market and sell enriched uranium and uranium enrichment and related services to—

"(A) the Department for governmental purposes; and

"(B) qualified domestic and foreign persons;

"(4) to conduct research and development as required to meet corporate objectives for the purpose of identifying, evaluating, improving and testing processes for uranium enrichment;

"(5) to operate, as a commercial enterprise, on a profitable and efficient basis; in order to maximize the long-term economic value of the Corporation to the United States Government including the payment of dividends to the Treasury as a return on the United States Government investment;

"(6) to conduct the business as a self-financing corporation and eliminate the need for appropriations or other sources of Government financing after enactment of this title;

"(7) to maintain a reliable and economical domestic source of enrichment services;

"(8) to conduct its activities in a manner consistent with the health and safety of the public;

"(9) to continue to meet the paramount objectives of ensuring the Nation's common defense and security (including consideration of United States policies concerning nonproliferation of atomic weapons and other nonpeaceful uses of atomic energy); and

"(10) to take all other lawful action in furtherance of the foregoing purposes.

"CHAPTER 23. CORPORATE OFFICES

"SEC. 1301. CORPORATE OFFICES.—The Corporation shall maintain an office for the service of process and papers in the District of Columbia, and shall be deemed, for purposes of venue in civil actions, to be a resident thereof. The Corporation may establish offices in such other place or places as it may deem necessary or appropriate in the conduct of its business.

"CHAPTER 24. POWERS AND DUTIES OF THE CORPORATION

"SEC. 1401. SPECIFIC CORPORATE POWERS AND DUTIES.—The Corporation—

"a. shall perform uranium enrichment or provide for uranium to be enriched by others at facilities of the Corporation; contracts in existence as of the date of enactment of this title between the Department and persons under contract to perform uranium enrichment and related services at facilities of the Department shall continue in effect as if the Corporation, rather than the Department, had executed these contracts;

"b. shall conduct, or provide for the conduct of, research and development activities related to the isotopic separation of uranium as the Corporation deems necessary or advisable for purposes of maintaining the Corporation as a continuing, commercial enterprise operating on a profitable and efficient basis;

"c. may acquire or distribute enriched uranium, feed material for uranium enrichment or depleted uranium in transactions with—

"(1) persons licensed under sections 53, 63, 103, or 104 of title I in accordance with the licenses held by such persons;

"(2) persons in accordance with, and within the period of, an agreement for cooperation arranged pursuant to section 123 of title I; or

"(3) as otherwise authorized by law;

"d. may—

"(1) enter into contracts with persons licensed under section 53, 63, 103, or 104 of title I for such periods of time as the Corporation may deem necessary or desirable, to provide uranium or uranium enrichment and related services; and

"(2) enter into contracts to provide uranium or uranium enrichment and related services in accordance with, and within the period of, an agreement for cooperation arranged pursuant to section 123 of title I or as otherwise authorized by law;

"e. shall sell to the Department as provided in this title, and without regard to section 57 e. of title I or the provisions of section 1535 of title 31, United States Code, such amounts of uranium or uranium enrichment and related services as the Department may determine from time to time are required: (1) for the Department to carry out Presidential direction and authorizations pursuant to section 91 of title I; and (2) for the conduct of other Department programs;

"f. may grant licenses, both exclusive and nonexclusive, for the use of patent and patent applications owned by the Corporation, and establish and collect charges, in the form of royalties or otherwise, for utilization of Corporation-owned facilities, equipment, patents, and technical information of a proprietary nature pertaining to the Corporation's activities.

"SEC. 1402. GENERAL POWERS OF THE CORPORATION.—In order to accomplish the purposes of this title, the Corporation—

"a. shall have perpetual succession unless dissolved by Act of Congress;

"b. may adopt, alter, and use a corporate seal, which shall be judicially noticed;

"c. may sue and be sued in its corporate name and be represented by its own attorneys in all judicial and administrative proceedings;

"d. may indemnify the Administrator, officers, attorneys, agents and employees of the Corporation for liabilities and expenses incurred in connection with their corporate activities;

"e. may adopt, amend, and repeal bylaws, rules and regulations governing the manner in which its business may be conducted and the power granted to it by law may be exercised and enjoyed;

"f. (1) may acquire, purchase, lease, and hold real and personal property including patents and proprietary data, as it deems necessary in the transaction of its business, and sell, lease, grant, and dispose of such real and personal property, as it deems necessary to effectuate the purposes of this title and without regard to the Federal Property and the Administrative Services Act of 1949, as amended;

"(2) Purchases, contracts for the construction, maintenance, or management and operation of facilities and contracts for supplies or services, except personal services, made by the Corporation shall be made after advertising, in such manner and at such times sufficiently in advance of opening bids, as the Corporation shall determine to be adequate to insure notice and an opportunity for competition; *Provided*, That advertising shall not be required when the Corporation determines that the making of any such purchase or contract without advertising is necessary in the interest of furthering the purposes of this title, or that advertising is not reasonably practicable;

"g. with the consent of the agency or Government concerned, may utilize or employ the services or personnel of any Federal Government agency, or any State or local government, or voluntary or uncompensated personnel to perform such functions on its behalf as may appear desirable;

"h. may enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its business and on such terms as it may deem appropriate, with any agency or instrumentality of the United States, or with any State, territory or possession, or with any political subdivision thereof, or with any person, firm, association, or corporation;

"i. may determine the character of and the necessity for its obligations and expenditures and the manner in which they shall be incurred, allowed, and paid, subject to the provisions of this title and other provisions of law specifically applicable to wholly owned Government corporations;

"j. notwithstanding any other provision of law, and without need for further appropriation, may use moneys, unexpended appropriations, revenues and receipts from operations, amounts received from obligations issued and other assets of the Corporation in accordance with section 1505, without fiscal year limitation, for the payment of expenses and other obligations incurred by the Corporation in carrying out its functions under, and within the requirements of, this title; and shall not be subject to apportionment under the provisions of subchapter II of chapter 15 of title 31, United States Code;

"k. may settle and adjust claims held by the Corporation against other persons or parties and claims by other persons or parties against the Corporation;

"l. may exercise, in the name of the United States, the power of eminent domain for the furtherance of the official purposes of the Corporation;

"m. shall have the priority of the United States with respect to the payment of debts out of bankrupt, insolvent, and decedents' estates;

"n. may define appropriate information as 'Government Commercial Information' and exempt such information from mandatory release pursuant to section 552(b)(3) of title 5, United States Code, when it is determined by the Administrator that such information if publicly released would harm the Corporation's legitimate commercial interests or those of a third party;

"o. may request, and the Administrator of General Services, when requested, shall furnish the Corporation such services as he is authorized to provide agencies of the United States;

"p. may accept gifts or donations of services, or of property, real, personal, mixed, tangible or intangible, in aid of any purposes herein authorized;

"q. may execute, in accordance with its bylaws, rules and regulations, all instruments necessary and appropriate in the exercise of any of its powers; and

"r. shall pay any settlement or judgment entered against it from the Corporation's own funds and not from the judgment fund (31 U.S.C. 1304). The provisions of the Federal Tort Claims Act (28 U.S.C. 1346(b) and 2671 et seq.) shall not apply to any claims arising from the activities of the Corporation after the effective date of this statute; *Provided,* That, this subsection shall not apply to liability or claims arising from a nuclear incident, if such incident occurs prior to the licensing of the Corporation's existing Gaseous Diffusion Facilities under Section 1601 of this title.

"SEC. 1403. CONTINUATION OF CONTRACTS, ORDERS, PROCEEDINGS AND REGULATIONS—

"a. Except as provided elsewhere in this title, all contracts, agreements, and leases with the Department, and licenses, and privileges that have been afforded to the Department prior to the date of the enactment of this title and that relate to uranium enrichment, including all enrichment services contracts, power purchase contracts and the December 18, 1987 Settlement Agreement with the Tennessee Valley Authority regarding payment of capacity charges under the Department's two power contracts with the Tennessee Valley Authority, shall continue in effect as if the Corporation had executed such contracts, agreements, or leases or had been afforded such licenses and privileges.

"b. As related to the functions vested in the Corporation by this title, all orders, determinations, rules, regulations and privileges of the Department shall continue in effect and remain applicable to the Corporation until modified, terminated, superseded, set aside or revoked by the Corporation, by any court of competent jurisdiction, or by operation of law unless otherwise specifically provided in this title.

"c. Except as provided elsewhere in this title, the transfer of functions related to and vested in the Corporation by this title shall not affect proceedings judicial or otherwise, relating to such functions which are pending at the time this title takes effect, and such proceedings shall be continued with the Corporation, as appropriate.

"SEC. 1404. LIABILITIES.—Except as provided elsewhere in this title, all liabilities attributable to operation of the uranium enrichment enterprise prior to the date of the enactment of this title shall remain direct liabilities of the Government of the United States; with regard to any claim seeking to impose such liability, section 1403 shall not be applicable and the United States shall be represented by the Department of Justice.

"CHAPTER 25. ORGANIZATION, FINANCE AND MANAGEMENT

"SEC. 1501. ADMINISTRATOR—

"a. The management of the Corporation shall be vested in an Administrator who shall be appointed by the President, by and with the advice and consent of the Senate, without regard to political affiliation. The Administrator shall be a person who, by reason of professional background and experience is specially qualified to manage the Corporation; *Provided, however,* That upon enactment of this title, the President shall appoint an existing officer or employee of the United States to act as Administrator until the office is filled.

"b. The Administrator—

"(1) shall be the chief executive officer of the Corporation and shall be responsible for the management and direction of the Corporation. The Administrator shall establish the offices, appoint the officers and employees of the Corporation (including attorneys), and define their responsibilities and duties. The Administrator shall appoint other officers and employees as may be required to conduct the Corporation's business;

"(2) shall serve a term of six years but may be reappointed;

"(3) shall, before taking office, take an oath to faithfully discharge the duties thereof;

"(4) shall have compensation determined by the President based upon the recommendation of the Secretary and the Corporate Board as provided in section 1503(c), except that in the absence of such determination compensation shall be set at Executive Level I, as prescribed in section 5312 of title 5, U.S.C.;

"(5) shall be a citizen of the United States;

"(6) shall designate an officer of the Corporation who shall be vested with the authority to act in the capacity of the Administrator in the event of absence or incapacity; and

"(7) may be removed from office only by the President and only for neglect of duty or malfeasance in office. The President shall communicate the reasons for any such removal to both Houses of Congress at least 30 days prior to the effective date of such removal.

"c. (1) The Secretary shall exercise general supervision over the Administrator only with respect to the activities of the Corporation involving—

"(A) the Nation's common defense and security; and

"(B) health, safety and the environment.

"(2) The Administrator shall be solely responsible for the exercise of all powers and responsibilities that are committed to the Administrator under this title and that are not reserved to the Secretary under paragraph (1), and, notwithstanding the provisions of section 9104(a)(4) of title 31, U.S.C., including the setting of the appropriate amount of, and paying, any dividend under section 1506(c) and all other fiscal matters.

"SEC. 1502. DELEGATION.—The Administrator may delegate to other officers or employees powers and duties assigned to the Corporation in order to achieve the purposes of this title.

"SEC. 1503. CORPORATE BOARD.—There is hereby established a Corporate Board appointed by the President which shall consist of five members, one of whom shall be designated as chairman. Members of the Corporate Board shall be individuals possessing high integrity, demonstrated accomplishment and broad experience in management and shall have strong backgrounds in science, engineering, business or finance. At least one member of the Corporate Board shall be, or previously have been, employed on a full-time basis in managing an electric utility:

"a. (1) The specific responsibilities of the Corporate Board shall be to:

"(A) review the Corporation's policies and performance and advise the Administrator and the Secretary on these matters; and

"(B) advise the Administrator and the Secretary on any other such matters concerning the Corporation as may be referred to the Corporate Board.

"(2) The Board shall have the right to recommend removal of the Administrator. In the event such recommendation is made, it shall be transmitted to the President by the

Secretary, together with the Secretary's own recommendation on removal of the Administrator.

"b. Members of the Board shall be provided access to all significant reports, memoranda, or other written communications generated or received by the Corporation. At the request of the Board, the Corporation shall make available to the Board all financial records, reports, files, papers and memoranda of, or in use by, the Corporation.

"(c). When appropriate, the Corporate Board may make recommendations to the Secretary concerning the compensation to be received by the Administrator and the ten officers of the Corporation who may receive compensation in excess of Executive Level II as provided in section 1504(a). The Secretary shall transmit such recommendations to the President together with the Secretary's own recommendations concerning compensation. In the event that less than three members of the Corporate Board are in office, recommendations concerning compensation may be made by the Secretary alone. The President shall have the power to enter into binding agreements concerning compensation to be received by the Administrator during his term of office and by the ten officers described in section 1504(a) during their term of employment, regardless of any recommendation received or not received under this title.

"d. Except for initial appointments, members of the Corporate Board shall serve five-year terms. Each member of the Corporate Board shall be a citizen of the United States. No more than three members of the Board shall be members of any one political party. Of those first appointed, the chairman shall serve for the full five-year term; one member shall serve for a term of four years; one shall serve for a term of three years; one shall serve for a term of two years; and one shall serve for a term of one year.

"e. Upon expiration of the initial term, such Corporate Board member appointed thereafter shall serve a term of five years. Upon the occurrence of a vacancy on the Board, the President shall appoint an individual to fill such vacancy for the remainder of the applicable term. Upon expiration of a term, a Board member may continue to serve up to a maximum of one year or until a successor shall have been appointed and assumed office, whichever occurs first.

"f. The members of the Corporate Board in executing their duties shall be governed by the laws and regulations regarding conflicts of interest, but exempted from other provisions and authority prescribed by the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2).

"g. The Corporate Board shall meet at any time pursuant to the call of the Chairman and as provided by the bylaws of the Corporation, but not less than quarterly. The Administrator or his representative shall attend all meetings of the Corporate Board.

"h. The Corporation shall compensate members of the Corporate Board at a per diem rate equivalent to Executive Level III, as defined in 5 U.S.C. 5314, in addition to reimbursement of reasonable expenses incurred when engaged in the performance of duties vested in the Corporate Board. Any Corporate Board member who is otherwise a Federal employee shall not be eligible for compensation above reimbursement for reasonable expenses incurred while attending official meetings of the Corporation.

"i. (1) The Corporate Board shall report at least annually to the Administrator on the performance of the Corporation and the issues that, in the opinion of the Board, require the attention of the Administrator. Any such report shall include such recommendations as the Board finds appropriate. A copy of any report under this subsection shall be transmitted promptly to the President, the Secretary, the Committee on Energy and Natural Resources of the Senate and to the Speaker of the House of Representatives.

"(2) Within ninety days after the receipt of any report under this subsection the Administrator shall respond in writing to such report and provide an analysis of such recommendations of the Board contained in the report. Such responses shall include plans for implementation of each recommendation or a justification for not implementing such recommendation. A copy of any response under this subsection shall be transmitted promptly to the President, the Secretary, the Committee on Energy and Natural Resources and to the Speaker of the House of Representatives.

"SEC. 1504. EMPLOYEES OF THE CORPORATION.—Officers and employees of the Corporation shall be officers and employees of the United States:

"a. The Administrator shall appoint all officers, employees and agents of the Corporation as are deemed necessary to effect the provisions of this title without regard to any administratively imposed limits on personnel, and any such officer, employee or agent shall only be subject to the supervision of the Administrator. The Administrator shall fix all compensation in accordance with the comparable pay provisions of section 5301 of title 5, United States Code, with compensation levels not to exceed Executive Level II, as defined in section 5313 of title 5, United States Code; Provided, that the Administrator may, upon recommendation by the Secretary and the Corporate Board as provided in section 1503(c) and approval by the President, appoint up to ten officers whose compensation shall not exceed an amount which is 20 per centum less than the compensation received by the Administrator, but not less than Executive Level II. The Administrator shall define the duties of all officers and employees and provide a system of organization inclusive of a personnel management system to fix responsibilities and promote efficiency. The Corporation shall assure that the personnel function and organization is consistent with the principles of section 2301(b) of title 5, United States Code, relating to merit system principles. Officers and employees of the Corporation shall be appointed, promoted and assigned on the basis of merit and fitness, and other personnel actions shall be consistent with the principles of fairness and due process but without regard to those provisions of title 5 of the United States Code governing appointments and other personnel actions in the competitive service.

"b. Any Federal employee hired before January 1, 1984, who transfers to the Corporation and who on the day before the date of transfer is subject to the Federal Civil Service Retirement System (subchapter III of chapter 83 of title 5, United States Code) shall remain within the coverage of such system unless he or she elects to be subject to the Federal Employees' Retirement System. For those employees remaining in the Federal Civil Service Retirement System, the Corporation shall withhold pay and shall pay into the Civil Service Retirement and Disability Fund the amounts specified in chapter 83 of title 5, United States Code. Employment by the Corporation without a break in continuity of service shall be considered to be employment by the United States Government for purposes of subchapter III of chapter 83 of title 5, United States Code. Any employee of the Corporation who is not within the coverage of the Federal Civil Service Retirement System shall be subject to the Federal Employees' Retirement System (chapter 84 of title 5, United States Code). The Corporation shall withhold pay and make such payments as are required under that retirement system. Further:

"(1) Any employee who transfers to the Corporation under this section shall not be entitled to lump sum payments for unused annual leave under section 5551 of title 5, United States Code, but shall be credited by the Corporation with the unused annual leave at the time of transfer.

"(2) An employee who does not transfer to the Corporation and who does not otherwise remain a Federal employee shall be entitled to all the rights and benefits available under Federal law for separated employees, except that severance pay shall not be payable to an employee who does not accept an offer of employment from the Corporation of work substantially similar to that performed by the employee for the Department.

"c. This section does not affect a right or remedy of an officer, employee, or applicant for employment under a law prohibiting discrimination in employment in the Government on the basis of race, color, religion, age, sex, national origin, political affiliation, martial status, or handicap conditions.

"d. Officers and employees of the Corporation shall be covered by chapter 73 of title 5, United States Code, relating to suitability, security and conduct.

"e. Compensation, benefits, and other terms and conditions of employment in effect immediately prior to the effective date of this section, whether provided by statute or by rules and regulations of the Department or the executive branch of the Government of the United States shall continue to apply to officers and employees who transfer to the Corporation from other Federal employment until changed by the Corporation in accordance with the provisions of this title.

"f. The provisions of sections 3323(a) and 8344 of title 5, United States Code, or any other law prohibiting or limiting the reemployment of retired officers or employees or the simultaneous receipt of compensation and retired pay or annuities, shall not apply to officers and employees of the Corporation who have retired from or ceased previous government service prior to April 28, 1987.

"SEC. 1505. TRANSFER OF PROPERTY TO THE CORPORATION.—In order to enable the Corporation to exercise the powers and duties vested in it by this title:

"a. The Secretary, as requested by the Administrator, is authorized and directed to transfer without charge to the Corporation all of the Department's right, title, or interest in and to, real or personal properties owned by the Department, or by the United States but under control or custody of the Department, which are related to and materially useful in the performance of the functions transferred by this title, including but not limited to the following—

"(1) production facilities for uranium enrichment inclusive of real estate, buildings and other improvements at production sites and their related and supporting equipment: *Provided,* That facilities, real estate, improvements and equipment related to the Oak Ridge Gaseous Diffusion Plant in Oak Ridge, Tennessee, and to the gas centrifuge enrichment program shall not transfer under this paragraph except for diffusion cascades and related equipment needed by the Corporation for replacement parts: *Provided further,* That any enrichment facilities retained by the Department shall not be used to enrich uranium in competition with the Corporation. This paragraph shall not prejudice consideration of any site as a candidate site for future expansion or replacement of uranium enrichment capacity;

"(2) at such time subsequent to the year 2000 as the Secretary determines that the Oak Ridge Gaseous Diffusion Plant should be decommissioned or decontaminated, or both, the Secretary shall convey without charge equipment and facilities relating to the Oak Ridge Gaseous Diffusion Plant not transferred in paragraph (1) to the Corporation;

"(3) facilities, equipment, and materials for research and development activities related to the isotopic separation of uranium by the gaseous diffusion technology;

"(4) the Department's stocks of preproduced enriched uranium, but excluding stocks of highly enriched uranium: *Provided,* That approximately two metric tons of the Department's highly enriched uranium shall be loaned to the Corporation as required for working inventory;

"(5) the Department's stocks of feed materials for uranium enrichment except for the quantities allocated to the national defense activities of the Department as of the date of enactment;

"(A) the Department's stockpile of enrichment tails existing as of the date of enactment, shall remain with the Department; and

"(B) stocks of feed materials which remain the property of the Department under paragraph (5) shall remain in place at the enrichment plant sites. The Corporation shall have access to and use of these feed materials provided such quantities as are used are replaced, or credit given, if use by the Department is subsequently needed.

"(6) all other facilities, equipment, materials, processes, patents, technical information of any kind, contracts, agreements, and leases to the extent these items concern the Corporation's functions and activities, except those items required for programs and activities of the Department and those items specifically excluded by this subsection.

The transfer authorized by this section is not subject to the requirements of section 120(h) of the Comprehensive Environmental Response, Compensation and Liability Act.

"b. The Secretary is authorized and directed to grant to the Corporation without charge the Department's rights and access to the Atomic Vapor Laser Isotope Separation, hereinafter referred to as 'AVLIS', technology and to provide on a reimbursable basis and at the request of the Corporation, the necessary cooperation and support of the Department to assure the commercial development and deployment of

AVLIS or other technologies in a manner consistent with the intent of this title.

"c. The Secretary is authorized and directed to grant the Corporation without charge, to the extent necessary or appropriate for the conduct of the Corporation's activities, licenses to practice or have practiced any inventions or discoveries (whether patented or unpatented) together with the right to use or have used any processes and technical information owned or controlled by the Department.

"d. The Secretary is directed, without need of further appropriation, to transfer to the Corporation the unexpended balance of appropriations and other monies available to the Department (inclusive of funds set aside for accounts payable), and accounts receivable which are related to functions and activities acquired by the Corporation from the Department pursuant to this title, including all advance payments.

"e. The President is authorized to provide for the transfer to the Corporation of the use, possession, and control of such other real and personal property of the United States which is reasonably related to the functions performed by the Corporation. Such transfers may be made by the President without charge as he may from time to time deem necessary and proper for achieving the purposes of this title.

"f. Title to depleted uranium resulting from the enrichment services provided to the Department by the Corporation shall remain with the Department.

"SEC. 1506. CAPITAL STRUCTURE OF THE CORPORATION:

"a. Upon commencement of operations of the Corporation, all liabilities then chargeable to unexpended balances of appropriations transferred under section 1505 shall become liabilities of the Corporation.

"b. (1) The Corporation shall issue capital stock representing an equity investment equal to the book value of assets transferred to the Corporation, as reported in the Uranium Enrichment Annual Report for fiscal year 1987, modified to reflect continued depreciation and other usual changes that occur up to the date of transfer. The Secretary of the Treasury shall hold such stock for the United States: *Provided,* That all rights and duties pertaining to management of the Corporation shall remain vested in the Administrator as specified in section 1501.

"(2) The capital stock of the Corporation shall not be sold, transferred, or conveyed by the United States unless such disposition is specifically authorized by Federal law enacted after enactment of this title.

"c. The Corporation shall pay into miscellaneous receipts of the Treasury of the United States or such other fund as provided by law, dividends on the capital stock, out of earnings of the Corporation, as a return on the investment represented by such stock. The Corporation shall pay such dividends out of earnings, unless there is an overriding need to retain these funds in furtherance of other corporate functions including but not limited to research and development, capital investments and establishment of cash reserves.

"d. The Corporation shall repay within a twenty-year period the amount of $364,000,000 into miscellaneous receipts of the Treasury of the United States, or such other fund as provided by law with interest on the unpaid balance from the date of enactment of this title at a rate equal to the average yield on twenty-year Government obligations as determined by the Secretary of the Treasury on the date of enactment of this title. The money required to be repaid under this subsection is hereinafter referred to as the 'Initial Debt'.

"e. Receipt by the United States of the stock issued by the Corporation (including all rights appurtenant thereto) together with repayment of the Initial Debt shall constitute the sole recovery by the United States of previously unrecovered costs that have been incurred by the United States for uranium enrichment activities prior to enactment of this title.

"SEC. 1507. BORROWING:

"a. (1) The Corporation is authorized to issue and sell bonds, notes, and other evidences of indebtedness (hereinafter collectively referred to as 'bonds') in an amount not exceeding $2,500,000,000 outstanding at any one time to assist in financing its activities and to refund such bonds. The principal of and interest on said bonds shall be payable from revenues of the Corporation.

"(2) Notwithstanding any other provision of law, the Corporation may pledge and use its revenues for payment of the principal of and interest on said bonds, for purchase or redemption thereof, and for other purposes incidental thereto, including creation of reserve funds and other funds which may be similarly pledged and used, to such extent and in such manner as it may deem necessary or desirable.

"(3) Notwithstanding any other provision of law, the Corporation is authorized to enter into binding covenants with the holders of said bonds—and with the trustee, if any—under any indenture, resolution, or other agreement entered into in connection with the issuance thereof with respect to the establishment of reserve funds and other funds, stipulations concerning the subsequent issuance of bonds, and such other matters, not inconsistent with this title, as the Corporation may deem necessary or desirable to enhance the marketability of said bonds.

"(4) Bonds issued by the Corporation hereunder shall not be obligations of, nor shall payments of the principal thereof or interest thereon be guaranteed by, the United States.

"b. Bonds issued by the Corporation under this section shall be negotiable instruments unless otherwise specified therein, shall be in such forms and denominations, shall be sold at such times and in such amounts, shall mature at such time or times not more than thirty years from their respective dates, shall be sold at such prices, shall bear such rates of interest, may be redeemable before maturity at the option of the Corporation in such manner and at such times and redemption premiums, may be entitled to such priorities of claim on the Corporation's revenues with respect to principal and interest payments, and shall be subject to such other terms and conditions, as the Corporation may determine: *Provided*, That at least fifteen days before selling each issue of bonds hereunder (exclusive of any commitment shorter than one year) the Corporation shall advise the Secretary of the Treasury as to the amount, proposed date of sale, maturities, terms and conditions and expected rates of interest of the proposed issue in the fullest detail possible. The Corporation shall not be subject to the provisions of section 9108 of title 31, United States Code. The Corporation shall be deemed part of an executive department or an independent establishment of the United States for purposes of the provisions of section 78c(c) of title 15, United States Code.

"c. Bonds issued by the Corporation hereunder shall be lawful investments and may be accepted as security for all fiduciary, trust, and public funds, the investment or deposit of which shall be under the authority or control of any officer or agency of the United States. The Secretary of the Treasury or any other officer or agency having authority over or control of any such fiduciary, trust, or public funds, may at any time sell any of the bonds of the Corporation acquired by them under this section: *Provided,* That the Corporation shall not issue or sell any bonds to the Federal Financing Bank.

"SEC. 1508. PRICING:

"a. For purposes of maximizing the long-term economic value of the Corporation to the United States Government, the Corporation shall establish prices for its products, materials and services provided to customers other than the Department on a basis that will, over the long term, allow it to recover its costs for providing the products, materials and services; repay the Initial Debt; recover costs of decontamination, decommissioning and remedial action; and attain the normal business objectives of a profitmaking Corporation.

"b. The Corporation shall establish prices for low assay enrichment services and other products, materials, and services provided the Department on a basis that will allow it to recover its costs on a yearly basis for providing such low assay enrichment services, products, materials and services, including depreciation and the cost of decontamination, decommissioning and remedial action, but excluding repayment of the Initial Debt and profit. In establishing such prices, the base charge paid by the Department in any given year shall not exceed the average base charge paid by customers other than the Department: *Provided, however,* That if the imposition of such average base charges as a limitation on the base charge paid by the Department in a given year does not permit the Corporation to fully recover its costs for providing such products, materials and services to the Department then, in subsequent years, the Corporation shall include such unrecovered costs in its prices charged the Department. Base charge shall mean the amount paid by a customer per separative work unit for low assay enrichment services during a given year (exclusive of any credits received under a voluntary overfeeding program), less the portion of such amount which represents the cost of decontamination and decommissioning and remedial action. The average base charge paid by customers other than the Department shall be determined by dividing the estimated total dollar amount of low assay enrichment services sales to customers other than the Department during a given year by the estimated amount of separative work units sold to customers other than the Department during that year. Adjustments between estimated and actual amounts shall be made upon receipt of actual sales data.

"c. The Corporation shall establish prices to the Department for high assay enrichment services on a basis that will allow it to recover its costs, on a yearly basis, for providing the products, materials or services, including depreciation and the costs of decontamination, decommissioning, and remedial action concerning enrichment property, but excluding repayment of the Initial Debt and profit. If the Department does not request any enrichment services in a given year, the Department shall reimburse the Corporation for costs required to maintain the minimum level of operation of the high assay production facility.

"d. (1) In accordance with the cost responsibilities defined in paragraphs (3) and (4), the Corporation shall recover from its customers in the prices and charges established in accordance with subsection (a), amounts that will be sufficient to pay for the costs of decommissioning, decontamination and remedial action for the various property of the Corporation, including property transferred under section 1505(a) at any time. Such costs shall be based on the point in time that such decommissioning, decontamination and remedial action are to be undertaken and accomplished: *Provided*, That by the year 2000 the Corporation shall have recovered and deposited in the Uranium Enrichment Decontamination and Decommissioning Fund 50 per centum of the estimated total costs of decontamination and decommissioning of all property transferred or to be transferred to the Corporation under section 1505, including the Oak Ridge Gaseous Diffusion Plant.

"(2) In order to meet the objective defined in paragraph (1), the Corporation shall periodically estimate the anticipated or actual costs of decommissioning and decontamination. Such estimates shall reflect any changes in assumptions or expectations relevant to meeting such objective, including, but not limited to, any changes in applicable environmental requirements. Such estimates shall be reviewed at least every two years.

"(3) For purposes of enabling the Corporation to meet the objective defined in paragraph (1) with respect to the Oak Ridge Gaseous Diffusion Plant, the Secretary shall periodically estimate the anticipated costs of decontamination and decommissioning and the time at which such decontamination and decommissioning is to be accomplished. Such estimates shall reflect any changes in assumptions or expectations relevant to meeting such objective, including but not limited to, any changes in applicable environmental requirements. The Secretary shall review such estimates every two years and convey this information to the Corporation.

"(4) With respect to property that has been used in the production of low-assay separative work,

"(A) The cost of decommissioning, decontamination and remedial action that shall be recoverable from customers other than the Department in prices and charges shall be in the same ratio to the total costs of decommissioning, decontamination and remedial action for the property in question as the production of separative work over the life of such property for commercial customers bears to the total production of separative work over the life of such property.

"(B) All other costs of decommissioning, decontamination and remedial action for such property shall be recovered in prices and charges to the Department.

"(5) With respect to property that has been used solely in the production of high-assay separative work, all costs of decommissioning, decontamination and remedial action shall be recovered in prices and charges to the Department.

"SEC. 1509. AUDITS—In fiscal years during which an audit is not performed by the Controller General in accordance with the provisions of section 9105 of title 31, United States Code, the financial transactions of the Corporation shall be audited by an independent firm or firms of nationally recognized certified public accountants who shall prepare such audits using standards appropriate for commercial corporate transactions. The fiscal year of the Corporation shall conform to the fiscal year of the United States. The General Accounting Office shall review such audits annually, and to the extent necessary, cause there to be a further examination of the Corporation using standards for commercial corporate transactions. Such audits shall be conducted at the place or places where the accounts of the Corporation are established and maintained. All books, financial records, reports, files, papers, memoranda, and other property of, or in use by, the Corporation shall be made available to the person or persons authorized to conduct audits in accordance with the provisions of this section.

"SEC. 1510. Reports:

"a. The Corporation shall prepare an annual report of its activities. This report shall contain—

"(1) a general description of the Corporation's operations;

"(2) a summary of the Corporation's operating and financial performance, including an explanation of the decision to pay or not pay dividends; and

"(3) copies of audit reports prepared in conformance with section 1509 of this title and the provisions of the Government Corporation Control Act, as amended.

"b. A copy of the annual report shall be provided to the President, the Secretary, the Committee on Energy and Natural Resources of the Senate, and the appropriate committees of the House of Representatives. Such reports shall be completed not later than ninety days following the close of each fiscal year and shall accurately reflect the financial position of the Corporation at fiscal year end, inclusive of any impairment of capital or ability of the Corporation to comply with the provisions of this title.

"SEC. 1511. CONTROL OF INFORMATION:

"a. The term 'Commission' shall be deemed to include the Corporation wherever such terms appears in section 141 and subsections a. and b. of section 142 of title I.

"b. No contracts or arrangements shall be made, nor any contract continued in effect, under section 1401, 1402, 1403, or 1404, unless the person with whom such contract or arrangement is made, or the contractor or prospective contractor, agrees in writing not to permit any individual to have access to Restricted Data, as defined in section 11 y. of title I, until the Office of Personnel Management shall have made an investigation and report to the Corporation on the character, associations, and loyalty of such individual, and the Corporation shall have determined that permitting such person to have access to restricted data will not endanger the common defense and security.

"c. The restrictions detailed in subsections b., c., d., e., f., g., and h., of section 145 of title I shall be deemed to apply to the Corporation where they refer to the Commission or a majority of the members of the Commission, and to the Administrator where they refer to the General manager.

"d. The Administrator shall keep the appropriate congressional committees fully and currently informed with respect to all of the Corporation's activities. To the extent consistent with the other provisions of this section, the Corporation shall make available to any of such committees all books, financial records, reports, files, papers, memoranda, or other information possessed by the Corporation upon receiving a request for such information from the chairman of such committee.

"e. Whenever the Corporation submits to the President, or the Office of Management and Budget, any budget, legislative recommendation, testimony, or comments on legislation, prepared for submission to the Congress, the Corporation shall concurrently transmit a copy thereof to the appropriate committees of Congress.

"f. The Corporation shall have no power to control or restrict the dissemination of information other than as granted by this or any other law.

"SEC. 1512. PATENTS AND INVENTIONS:

"a. The term 'Commission' shall be deemed to include the Corporation wherever such term appears in section 152, 153 b. (1), and 158 of title I. The Corporation shall pay such royalty fees for patents licensed to it under section 153 b. (1) of title I as are paid by the Department under that provision. Nothing in title I or this title shall affect the right of the Corporation to require that patents granted on inventions, that have been conceived or first reduced to practice during the course of research or operations of, or financed by the Corporation, be assigned to the Corporation.

"b. The Department shall notify the Corporation of all reports heretofore or hereafter filed with it under subsection 151 c. of title I and all applications for patents heretofore or hereafter filed with the Commissioner of Patents of which the Department has notice under subsection 151 d. of title I or otherwise, whenever such reports or applications involve matters pertaining to the functions or responsibilities of the Corporation in accordance with this title. The Department shall make all such reports available to the Corporation, and the Commissioner of Patents shall provide the Corporation access to all such applications. All reports and applications to which access is so provided shall be kept in confidence by the Corporation, and no information concerning the same given without authority of the inventor or owner unless necessary to carry out the provisions of any Act of Congress.

"c. The Corporation, without regard for any of the conditions specified in paragraph 153 c. (1), (2), (3), or (4) of title I, may at any time make application to the Department for a patent license for the use of an invention or discovery useful in the production or utilization of special nuclear material or atomic energy covered by a patent when such patent has not been declared to be affected with the public interest under subsection 153 b. (1) of title I and when use of such patent is within the Corporation's authority. Any such application shall constitute an application under subsection 153 c. of title I subject, except as specified above, to all the provisions of subsections 153 c., d., e., f., g., and h., of title I.

"d. With respect to the Corporation's functions under this title, section 158 of title I shall be deemed to include the Corporation within the phrase, 'any other licensee' in the first sentence thereof and within the phrase 'such licensee' in the second sentence thereof.

"e. The Corporation shall not be liable directly or indirectly for any damages or financial responsibility with respect to secrecy orders imposed under section 181 of title 35, United States Code, through 187.

"f. The Corporation shall not be liable or responsible for any payments made or awards under subsection 157 b. (3) of title I, or any settlements or judgments involving claims for alleged patent infringement except to the extent that any such awards, settlements or judgments are attributable to activities of the Corporation after the effective date of this title.

"g. The Corporation shall keep currently informed as to matters affecting its rights and responsibilities under chapter 13 of title I as modified by this section and shall take all appropriate action to avail itself of such rights and satisfy such responsibilities. The Department in discharging its responsibilities under chapter 13 of title I shall exercise diligence in informing the Corporation of matters affecting the responsibilities and jurisdiction of the Corporation and seeking and following as appropriate the advice and recommendation of the Corporation in such matters.

"CHAPTER 26. LICENSING, TAXATION, AND MISCELLANEOUS PROVISIONS

"SEC. 1601. LICENSING:

"a. Notwithstanding any other provision of law, with respect solely to facilities, equipment and materials for activities related to the isotopic separation of uranium by the gaseous diffusion technology at facilities in existence as of the date of enactment of this title, the Corporation and its contractors are hereby exempted from the licensing requirements and prohibitions of sections 57, 62, 81 and other provisions of title I, to the same extent as the Department and its contractors are exempt in regard to the Department's own functions and activities. Such exemption shall remain in effect unless and until the Corporation and its contractors receive all necessary licenses for such facilities, equipment and materials as are required under title I.

"b. Within two years of the enactment of this title, the Commission shall promulgate regulations or issue other regulatory guidance under title I for the licensing of facilities described in subsection (a) that employ the gaseous diffusion technology.

"c. Within one year after the promulgation of regulations or the issuance of other regulatory guidance under subsection (b), the Corporation and its contractors shall make necessary applications for and otherwise seek to obtain such licenses as will remove the exemption provided under subsection (a). As part of its application, the Corporation shall submit an Environmental Impact Statement in accordance with the requirements of the National Environmental Policy Act. The Commission shall adopt this statement to the extent practicable under the National Environmental Policy Act. In preparing such statement, the Corporation, and in making any licensing decision, the Commission, shall not consider the need for such facilities, alternatives to such facilities, or the costs compared to the benefits of such facilities. The Commission shall act on licensing requests by the Corporation in a timely manner.

"d. The Corporation shall not transfer or deliver any source, special nuclear or byproduct materials or production or utilization facilities, as defined in title I, to any person who is not properly qualified or licensed under the provisions of title I.

"e. The Corporation shall be subject to the regulatory jurisdiction of the Commission and the Department of Transportation with respect to the packaging and transportation of source, special nuclear and byproduct materials.

"SEC. 1602. EXEMPTION FROM TAXATION AND PAYMENTS IN LIEU OF TAXES—

"a. In order to render financial assistance to those states and localities in which the facilities of the Corporation are located, the Corporation is authorized and directed to make payments to state and local governments as provided in this section. Such payments shall be in lieu of any and all state and local taxes on the real and personal property, activities and income of the Corporation. All property of the Corporation, its activities, and income are expressly exempted from taxation in any manner or form by any state, county, or other local government entity. The activities of the Corporation for this purpose shall include the activities of organizations pursuant to cost-type contracts with the Corporation to manage, operate and maintain its facilities. The income of the Corporation shall include income received by such organizations for the account of the Corporation. The income of the Corporation shall not include income received by such organizations for their own accounts, and such income shall not be exempt from taxation.

"b. The Corporation shall make annual payments, in amounts determined by the Corporation to be fair and reasonable, to the state and local governmental agencies having tax jurisdiction in any area where facilities of the Corporation are located. In making such determinations, the Corporation shall be guided by the following criteria:

"(1) Amounts paid shall not exceed the tax payments that would be made by a private industrial corporation owning similar facilities and engaged in similar activities at the same location: *Provided, however,* That there shall be excluded any amount that would be payable as a tax on net income.

"(2) The Corporation shall take into account the customs and practices prevailing in the area with respect to appraisal, assessment, and classification of industrial property and any special considerations extended to large-scale industrial operations.

"(3) No amount shall be included to the extent that any tax unfairly discriminates against the class of taxpayers of which the Corporation would be a member if it were a private industrial corporation, compared with other taxpayers or classes of taxpayers.

"(4) In no event shall the payment made to any taxing authority for any period be less than the payments which would have been made to such taxing authority for the same period by the Department and its cost-type contractors on behalf of the Department with respect to property that has been transferred to the Corporation under section 1505 and which would have been attributable to the ownership, management operation, and maintenance of the Department's uranium enrichment facilities, applying the laws and policies prevailing immediately to the enactment of this title.

"c. Payments shall be made by the Corporation at the time when payments of taxes by taxpayers to each taxing authority are due and payable: *Provided,* That no payment shall be made to the extent that the tax would apply to a period prior to the enactment of this title.

"d. The determination by the Corporation of the amounts due hereunder shall be final and conclusive.

"SEC. 1603. MISCELLANEOUS APPLICABILITY OF TITLE I:

"a. Any references to the term 'Commission' or to the Department in sections 105 b., 110 a., 161 c., 161 k., 161 q., 165 a., 221 a., 229, 230 and 232 of title I shall be deemed to include the Corporation.

"b. Section 188 of title I shall apply to licensed facilities of the Corporation. For purposes of applying such section to facilities of the Corporation:

"(1) The term 'Commission' shall be deemed to refer to the Secretary;

"(2) There shall be no requirement for payment of just compensation to the Corporation, and receipts from operation of the facility in question shall continue to accrue to the benefit of the Corporation; and

"(3) The Secretary shall have the discretion to determine how and by whom the facility in question will be operated.

"SEC. 1604. COOPERATION WITH OTHER AGENCIES.—The Corporation is empowered to use with their consent the available services, equipment, personnel, and facilities of other civilian or military agencies and instrumentalities of the Federal Government, on a reimbursable basis and on a similar basis to cooperate with such other agencies and instrumentalities in the establishment and use of services, equipment, and facilities of the Corporation. Further, the Corporation may confer with and avail itself of the cooperation, services, records, and facilities of state, territorial, municipal or other local agencies.

"SEC. 1605. APPLICABILITY OF ANTITRUST LAWS:

"a. The Corporation shall conduct its activities in a manner consistent with the policies expressed in the antitrust laws, except as required by the public interest.

"b. As used in this subsection, the term 'antitrust laws' means:

"(1) The Act entitled: 'An Act to protect trade and commerce against unlawful restraints and monopolies,' approved July 2, 1890 (15 U.S.C. 1–7), as amended;

"(2) The Act entitled, 'An Act to supplement existing laws against unlawful restraints and monopolies, and for other purposes,' approved October 15, 1914 (15 U.S.C. 12–27), as amended;

"(3) Sections 73 and 74 of the Act entitled, 'An Act to reduce taxation, to provide revenue for the Government, and for other purposes,' approved August 27, 1894 (15 U.S.C. 8 and 9), as amended; and

"(4) The Act of June 19, 1936, chapter 592 (15 U.S.C. 13, 13a, 13b, and 21a).

"SEC. 1606. NUCLEAR HAZARD INDEMNIFICATION.—The Administrator shall have the same authority to indemnify the contractors of the Corporation as the Secretary has to indemnify contractors under section 170 d. of title I. Except that with respect to any licenses issued to the Corporation by the Commission, the Commission shall treat the Corporation and its contractors as its licensees for the purposes of Section 170 of this Act.

"SEC. 1607. INTENT.—It is hereby declared to be the intent of this title to aid the Corporation in discharging its responsibilities under this title by providing it with adequate authority and administrative flexibility to obtain necessary funds with which to assure the maximum achievement of the purposes hereof as provided herein, and this title shall be construed liberally to effectuate such intent.

"SEC. 1608. REPORT:

"a. Three years after enactment of this title or January, 1993, whichever is later, the Administrator shall submit to the President and to Congress an interim report setting forth the views and recommendations of the Administrator regarding transfer of the functions, powers, duties, and assets of the Corporation to private ownership. Five years after enactment of this title, the Administrator shall submit to the President and the Congress a final report setting forth the views and recommendations of the Administrator regarding transfer of the functions, powers, duties, and assets of the Corporation to private ownership. If the Administrator, in the final report, recommends such transfers, the report shall include a plan for implementation of the transfers.

"b. Within one hundred and eighty days after receipt of the final report under subsection (a), the President shall transmit to Congress his recommendations regarding the report, including a plan for implementation of any transfers recommended by the President and any recommendations for legislation necessary to effectuate such transfers.

"CHAPTER 27. DECONTAMINATION AND DECOMMISSIONING

"SEC. 1701. ESTABLISHMENT:

"a. ESTABLISHMENT OF FUND.—(1) There is hereby established in the Treasury of the United States an account of the Corporation to be known as the Uranium Enrichment Decontamination and Decommissioning Fund (hereinafter referred to in this chapter as the 'Fund'). In accordance with section 1402(j), such account and any funds deposited therein, shall be available to the Corporation for the exclusive purpose of carrying out the purposes of this chapter.

"(2) The Fund shall consist of:

"(A) Amounts paid into it by the Corporation in accordance with section 1702; and

"(B) Any interest earned under subsection (b)(2).

"b. ADMINISTRATION OF FUND.—(1) The Secretary of the Treasury shall hold the Fund and, after consultation with the Corporation, annually report to the Congress on the financial condition and operations of the Fund during the preceding fiscal year.

"(2) At the direction of the Corporation, the Secretary of the Treasury shall invest amounts contained within such Fund in obligations of the United States:

"(A) Having maturities determined by the Secretary of the Treasury to be appropriate to the needs of the Fund, as determined by the Corporation; and

"(B) Bearing interest at rates determined to be appropriate by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States with remaining periods to maturity comparable to such obligations.

"(3) At the request of the Corporation, the Secretary of the Treasury shall sell such obligations and credit the proceeds to the Fund.

"SEC. 1702. DEPOSITS.—Within sixty days of the end of each fiscal year, the Corporation shall make a payment into the Fund in an amount equal to the costs of decontamination and decommissioning that have been recovered during such fiscal year by the Corporation in its prices and charges established in accordance with section 1508 for products, materials, and services.

"SEC. 1703. PERFORMANCE AND DISBURSEMENTS:

"a. When the Corporation determines that particular property should be decommissioned or decontaminated, or both, or with respect to the Oak Ridge Gaseous Diffusion Plant at such time as the plant is conveyed to the Corporation, the Corporation shall enter into a contract for the performance of such decommissioning and decontamination.

"b. The Corporation shall pay for the costs of such decommissioning and decontamination out of amounts contained within the Fund.".

SEC. 113. TREATMENT OF THE CORPORATION AS BEING PRIVATELY-OWNED FOR PURPOSES OF THE APPLICABILITY OF ENVIRONMENTAL AND OCCUPATIONAL SAFETY LAWS.—The United States Enrichment Corporation shall be subject to Federal, State, and local environmental laws and the Occupational Safety and Health Act (29 U.S.C. 651–678) to the same extent as is the Department of Energy as of the date of enactment. After four years from the date of enactment of this title, the United States Enrichment Corporation shall become subject to such laws to the same extent as a privately-owned corporation, unless the President determines that additional time is necessary to achieve the purposes of title II of the Atomic Energy Act of 1954, as amended.

SEC. 114. MISCELLANEOUS PROVISIONS.—(a) Section 9101(3) of title 31, United States Code (relating to the definition of "wholly-owned Government corporation") is amended by adding at the end the following: "(N) United States Enrichment Corporation.".

(b) In subsection 41 a. of the Atomic Energy Act of 1954, as amended, the word "or" appearing before the numeral "(2)" is deleted, a semicolon is substituted for a period at the end of the subsection and the following new paragraph is added: "or (3) are owned by the United States Enrichment Corporation.".

(c) In subsection 53 c. (1) of the Atomic Energy Act of 1954, as amended, the word "or" is inserted before the word "grant" and the phrase "or through the provision of production or enrichment services" is deleted in both places where it appears in such subsection.

(d) The Atomic Energy Act of 1954, as amended, is further amended in section 318(1) by striking the period after "activities" and by adding the following:

"(D) any facility owned by the United States Enrichment Corporation.".

(e) Subsection 905(g)(1) of title II, United States Code, is amended to include "United States Enrichment Corporation" at the end thereof.

(f) Section 306 of title III of the Energy and Water Development Appropriations Act, 1988, Public Law 100–202, is repealed.

SEC. 115. LIMITATION ON EXPENDITURES.—For fiscal year 1991, total expenditures of the United States Enrichment Corporation shall not exceed total receipts.

SEC. 116. SEVERABILITY.—If any provision of this title, or the application of any provision to any entity, person or circumstance, shall for any reason be adjudged by a court of component jurisdiction to be invalid, the remainder of this Act, or the application of the same shall not be thereby affected.

SEC. 117. EFFECTIVE DATE.—Except as otherwise provided, all provisions of this title shall take effect on the day following the end of the first full fiscal year quarter following the enactment of this Act: *Provided, however*, That the Administrator or Acting Administrator of the United States Enrichment Corporation may immediately exercise the management responsibilities and powers of subsection 1501(a) of the Atomic Energy Act of 1954, as amended by this Act and previous Acts.

"TITLE II—URANIUM

Subtitle A—Short Title, Findings and Purpose, Definitions

This title may be cited as the "Uranium Security and Tailings Reclamation Act of 1991."

SEC. 202. FINDINGS AND PURPOSE.

(a) FINDINGS.—The Congress finds for purposes of this title that—

(1) the United States uranium industry has long been recognized as vital to United States energy independence and as essential to United States national security, but has suffered a drastic economic setback, including a 90 per centum reduction in employment, closure of almost all mines and mills, more than a 75 per centum drop in production, and a permanent loss of uranium reserves;

(2) during the remainder of this century approximately 20 per centum of United States electricity is expected to be produced from uranium fueled powerplants owned by domestic electric utilities;

(3) the United States has been the leading uranium producing nation and holds extensive proven reserves of natural uranium that offer the potential for secure sources of future supply;

(4) a variety of economic factors, policies of foreign governments, foreign export practices, the discovery and development of low cost foreign reserves, new Federal regulatory requirements, and cancellation of nuclear powerplants have caused most United States producers to close or suspend operations over the past six years and have resulted in the domestic uranium industry being found "not viable" by the Secretary under

provisions of the Atomic Energy Act of 1954, as amended;

(5) providing assistance to the domestic uranium industry is essential to—

(A) preclude an undue threat from foreign supply disruptions that could hinder the Nation's common defense and security,

(B) assure an adequate long-term supply of domestic uranium for the Nation's nuclear power program to preclude an undue threat from foreign supply disruptions or price controls, and

(C) aid in the Nation's balance-of-trade payments through foreign sales;

(6) the Uranium Mill Tailings Radiation Control Act of 1978 (42 U.S.C. 7901–7942);

(A) was enacted to provide for the reclamation and regulation of uranium and thorium mill tailings; and

(B) did not provide for a Federal contribution for the reclamation of tailings at uranium and thorium processing sites which were generated pursuant to Federal defense contracts;

(7) the owners or licensees of active uranium and thorium sites and the Federal Government have each benefitted from uranium and thorium produced at the

active sites, and it is equitable that they share in the costs of reclamation, decommissioning and other remedial actions at the commingled sites; and,

(8) the creation of an assured system of financing will greatly facilitate and expedite reclamation and remedial actions at active uranium and thorium processing sites.

(b) PURPOSE.—It is the purpose of subtitles B and C of this title to—

(1) ensure an adequate long-term supply of domestic uranium for the Nation's common defense and security and for the Nation's nuclear power program;

(2) provide assistance to the domestic uranium industry; and

(3) establish, facilitate, and expedite a comprehensive system for financing reclamation and other remedial action at active uranium and thorium processing sites.

SEC. 203. DEFINITIONS.

For purposes of this title—

(1) the term "active site" means—

(A) any uranium or thorium processing site, including the mill, containing by-product material for which a license (issued by the Nuclear Regulatory Commission or its predecessor agency under the Atomic Energy Act of 1954, as amended, or by a State as permitted under section 274 of such Act (42 U.S.C. 2021)) for the production at such site of any uranium or thorium derived from ore—

(i) was in effect on January 1, 1978;

(ii) was issued or renewed after January 1, 1978; or

(iii) for which an application for renewal or issuance was pending on, or after January 1, 1978; and

(B) any other real property or improvement on such real property that is determined by the Commission to be—

(i) in the vicinity of such site; and

(ii) contaminated with residual by-product material;

(2) the term "byproduct material" has the meaning given such term in section 11(e)(2) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014(e)(2));

(3) the term "civilian nuclear power reactor" means any civilian nuclear powerplant required to be licensed under section 103 or section 104 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2133);

(4) the term "Corporation" means the United States Enrichment Corporation established under section 1202 of title II of the Atomic Energy Act of 1954, as amended;

(5) the term "Department" means the Department of Energy;

(6) the term "domestic uranium" means any uranium that has been mined in the United States including uranium recovered from uranium deposits in the United States by underground mining, open-pit mining, strip mining, in situ recovery, leaching, and ion recovery, or recovered from phosphoric acid manufactured in the United States;

(7) the term "domestic uranium producer" means a person or entity who produces domestic uranium and who has, to the extent required by State and Federal agencies having jurisdiction, licenses and permits for the operation, decontamination, decommissioning, and reclamation of sites, structures and equipment;

(8) the term "enrichment tails" means uranium in which the quantity of the U–235 isotope has been depleted in the enrichment process;

(9) the term "reclamation, decommissioning, and other remedial action" includes work, including but not limited to disposal work, accomplished in order to

comply with all applicable requirements, including but not limited to those established pursuant to the Uranium Mill Tailings Radiation Control Act of 1978, as amended, or where appropriate, with requirements established by a State that is a party to a discontinuance agreement under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021). The term shall also include work at an active site prior to the date of enactment of this act accomplished in order to comply with the foregoing requirements;

(10) the term "Secretary" means the Secretary of Energy;

(11) the terms "source material" and "special nuclear material" have the meaning given such terms in section 11 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014); and

(12) the term "tailings" means the wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

Subtitle B—Uranium Revitalization

SEC. 210. VOLUNTARY OVERFEED PROGRAM.

(a) The Corporation shall establish, for a period of not less than five years commencing at the beginning of fiscal year 1992, a voluntary overfeeding program which shall be made available to the Corporation's enrichment services customers. The term "overfeeding" means the use of uranium in the enrichment process in excess of the amount required at the transactional tails assay.

(b) The Corporation shall encourage its enrichment services customers to participate in the voluntary overfeeding program as provided in this section. Uranium supplied by the enrichment customer shall be used by the Corporation for voluntary overfeeding in the enrichment process to reduce the amount of power required to produce the enriched uranium ordered by the enrichment services customer. The dollar savings resulting from the reduced power requirements shall be credited to the enrichment services customer.

(c) In the event an enrichment services customer does not elect to provide uranium for voluntary overfeeding to be used to process its enrichment order, the Corporation shall establish a method for such uranium to be voluntarily supplied by other enrichment services customer(s) which have expressed to the Corporation an interest in participating in such a program and the Corporation shall credit the resulting dollar savings realized from the reduced power requirements to the enrichment services customer(s) providing the uranium.

(d) An enrichment services customer providing uranium for voluntary overfeeding shall certify to the Corporation that such uranium is domestic uranium which has been actually produced by a domestic uranium producer after the enactment of this Act or domestic uranium actually produced by a domestic uranium producer before the enactment of this Act and held by it without sale, transfer or redesignation of the origin of such uranium on a DOE/NRC form 741.

(e) Within ninety days of the date of enactment of this Act, the Corporation shall establish procedures to implement this program. Such procedures shall include, but not be limited to, delivery, reporting and certification requirements, and provisions for failure to comply with the requirements of the voluntary overfeeding program. The determination of the voluntary overfeeding credit and sufficient data to support such determination shall be available to the Corporation's enrichment services customers and to qualified domestic producers.

SEC. 211. NATIONAL STRATEGIC URANIUM RESERVE.

There is hereby established the National Strategic Uranium Reserve under the direction and control of the Secretary. The Reserve shall consist of 50,000,000 pounds of natural uranium contained in stockpiles or inventories currently held by the United States for defense purposes. Effective on the date of enactment of this Act, use of the Reserve shall be restricted to military purposes and government research. Use of the Department's stockpile of enrichment tails existing on the date of enactment of this Act shall be restricted to military purposes.

SEC. 212. RESPONSIBILITY FOR THE INDUSTRY.

(a) The Secretary shall have a continuing responsibility for the domestic uranium industry, and shall take any action, which he determines to be appropriate under existing law, to encourage the use of domestic uranium: *Provided, however,* That the Secretary, in fulfilling this responsibility, shall not use any supervisory authority over the Corporation. The Secretary shall report annually to the appropriate committees of Congress on action taken with respect to the domestic uranium industry, including action to promote the export of domestic uranium pursuant to paragraph (b) of this section.

(b) ENCOURAGE EXPORT.—The Department, with the cooperation of the Department of Commerce, the United States Trade Representative and other governmental organizations, shall encourage the export of domestic uranium. Within one hundred and eighty days of the date of enactment of this Act the Secretary shall develop recommendations and implement government programs to promote the export of domestic uranium.

SEC. 213. GOVERNMENT URANIUM PURCHASES.

(a) After the date of enactment of this Act, the United States of America, its agencies and instrumentalities, shall only have the authority to enter into contracts or orders for the purchase of uranium which is (1) of domestic origin and (2) is purchased from domestic uranium producers: *Provided*, That this section shall not affect purchases under a contract for delivery of a fixed amount of uranium entered into before the date of enactment of this Act.

(b) Subsection (a) shall not apply to the Tennessee Valley Authority.

SEC. 214. SECRETARY'S AUTHORITY TO MAKE REGULATIONS.

The Secretary shall issue appropriate regulations to implement the purposes of this title.

Subtitle C—Remedial Action for Active Processing Sites

SEC. 220. REMEDIAL ACTION PROGRAM.

(a) IN GENERAL.—Except as provided in subsection (b), the costs of documentation, decommissioning, reclamation, and other remedial action at an active uranium or thorium processing site shall be borne by persons licensed under section 62 or 81 of the Atomic Energy Act of 1954 (42 U.S.C. 2091, 2111) for any activity at such site which results or has resulted in the production of byproduct material.

(b) REIMBURSEMENT.—

(1) IN GENERAL.—The Secretary shall, subject to paragraph (2), reimburse at least annually a licensee described in subsection (a) for such portion of the reclamation, decommissioning and other remedial action costs described in such subsection as are—

(A) determined by the Secretary to be attributable to tailings generated as an incident of sales to the United States; and

(B) incurred by such licensee not later than December 31, 2002.

(2) AMOUNT.—

(A) TO INDIVIDUAL ACTIVE SITE URANIUM LICENSEES.—The amount of reimbursement paid to any licensee under paragraph (1) shall be determined by the Secretary in accordance with regulations issued pursuant to section 221 and shall not exceed an amount equal to $4.50 multiplied by the dry short tons of tailings located at the site as of the effective date of this title and generated as an incident of sales to the United States.

(B) TO ALL ACTIVE SITE URANIUM LICENSEES.—Payments made under paragraph (1) to active site uranium licensees shall not in the aggregate exceed $270,000,000.

(C) TO THORIUM LICENSEES.—Payments made under paragraph (1) to the licensee of the active thorium site shall not exceed $30,000,000.

(D) INFLATION ESCALATION INDEX.—The amounts in subsections (A), (B) and (C) of this section shall be increased annually based upon an inflation index. The Secretary shall determine the appropriate index to apply.

(E) ADDITIONAL REIMBURSEMENT.—Provided however, (i) the Secretary shall determine as of July 31, 2005, whether the amount authorized to be appropriated in section 222, when considered with the $4.50 per dry short ton limit on reimbursement, exceeds the total cost reimbursable to the licensees of active sites for reclamation, decommissioning and other remedial action; and (ii) if the Secretary determines there is an excess, the Secretary may allow reimbursement in excess of $4.50 per dry short ton on a pro-rated basis at such sites that reclamation, decommissioning and other remedial action costs for tailings generated as an incident of sales to the United States exceed the $4.50 per dry short ton limitation.

SEC. 221. REGULATIONS.

The Secretary shall issue regulations governing reimbursement under section 220. An active uranium or thorium processing site owner shall apply for reimbursement hereunder by submitting a statement for the amount of reimbursement, together with reasonable documentation in support thereof, to the Secretary. Any such statement for reimbursement, supported by reasonable documentation, shall be approved by the Secretary and reimbursement therefor shall be made in a timely manner subject only to the limitations of section 220.

SEC. 222. AUTHORIZATION.

There is authorized to be appropriated for purposes of this subtitle not more than $300,000,000 increased annually as provided in section 220 based upon an inflation index as determined by the Secretary.

○

Senator **Ford**. We are fortunate in having with us today two men who understand the enrichment business and the problems it faces. As Deputy Secretary of Energy, Henson Moore oversees the program within DOE. Nick Timbers is one of the principal authors of the financial analysis of the enterprise prepared by Smith Barney last year. We are pleased that Senator Wallop is here, the ranking member of the Energy Committee.

Senator Wallop, if you have a statement we would be glad to entertain it at this time.

STATEMENT OF HON. MALCOLM WALLOP, U.S. SENATOR FROM WYOMING

Senator **Wallop**. Thank you, Senator Ford, and I want to thank you for scheduling this hearing on legislation to restructure the Department's uranium enrichment enterprise.

It ought to go without saying that until we can once again assure the future of nuclear power as a viable option in our Nation's energy future, our continuing dependence on imported oil will remain a threat to our Nation's economic health and energy security.

Almost half of the capital base of the United States electric power industry is invested in 100 uranium-fueled nuclear facilities that now supply 20 percent of the United States' electricity. In addition, our nuclear fleet of 150 uranium-fueled submarines and surface ships must have sufficient uranium to assure an uninterrupted fuel supply.

For more than 5 years this committee has labored with this critical matter only to have legislative proposals die in the House. The Congress is long overdue in coming to grips with the fact that the Federal Government's uranium enrichment enterprise is no longer able to effectively compete with its more aggressive counterparts around the world.

Since we began this effort, the character of international markets has changed dramatically. The Soviet Union is now actively dumping uranium and enriched uranium in order to increase their market share. Soviet prices bear no real relationship to production costs. Among their objectives are greater hard-currency income and an announced intent, and I would say again, an announced intent to capture in excess of 25 percent of the Western world's nuclear fuel market.

No matter from where you view this, whether you view the matter from the perspective of the bureaucrat, the budget cruncher, the taxpayer, or DOE's customers, their actions must be viewed as a threat to DOE's enrichment enterprise and the Enrichment Corporation that this legislation would establish. Already the Soviet marketing practices have driven uranium prices to record lows, which have led to the closure of many mines and mills in the United States.

The full size of the Soviet threat to DOE's enrichment enterprise is unknown, but informed estimates are that their stockpiles range as high as 500 million pounds. Moreover, their estimated annual uranium production may be as high as 35 million pounds a year. By comparison, the United States' uranium production last year was about 8.7 million pounds, less than 25 percent of U.S. demand. With little effort the Soviets could dump uranium on the international marketplace in volumes greater than the entire U.S. production.

So I fully support congressional efforts to restructure DOE's enrichment enterprise into a creature that thinks, looks, acts, and responds like a business. But in my judgment we must also deal with the threat of Soviet dumping to the Enrichment Corporation once established. The success of Soviet strategy depends upon the apparent willingness of some utilities to buy Soviet natural or enriched uranium and enrichment services. Some will not buy Soviet uranium, others restrict their purposes because of recognition that a viable domestic industry is in their interest.

A utility witness at Tuesday's advanced nuclear reactor hearing expressed concern that should utilities purchase domestic uranium or enriched uranium at prices higher than they can obtain their needs internationally, that their domestic purchases will be questioned by State regulatory bodies as imprudent. This is a valid concern. Any major shift by utilities from the purchase of DOE enrichment services to the Soviets will further threaten the economic viability of the enormous Federal investment in DOE's enrichment enterprise. If the economic viability of the Federal enrichment enterprise is to be assured, it may be necessary to specifically address the threat posed by Soviet marketing practices.

I generally look forward to hearing the views of today's witnesses on this point. Thank you, Mr. Chairman.

[The prepared statement of Senator Wallop follows:]

Prepared Statement of Hon. Malcolm Wallop, U.S. Senator From Wyoming

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I look forward to hearing the view of today's witnesses on this point.

Senator FORD. Senator Domenici.

STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO

Senator DOMENICI. Well, Mr. Chairman, I was just thinking about how long it has been since we started this, and I guess I was thinking that the first time we passed it we were in the majority. That is how long ago it was.

Senator FORD. I can still remember.

Senator DOMENICI. I was just thinking that maybe it will take so long we might be back in again.

Senator FORD. I cannot remember that.

[Laughter.]

Senator DOMENICI. If we can get it done here this year, it is all right with me. We do not have to wait until 2 years from now. But in any event, let me just suggest that we are developing a new energy policy for our country, and we have obviously become realists. We are not trying to become energy independent, but rather to minimize our dependence in our own national security interest. And it is amazing to me. We are busy trying to do some new things, trying to pass a new comprehensive law that we have had before us for 5 years, a proposal that would make our uranium enrichment capacity competitive. If we fail to do so, that will just make us more and more dependent, and if we do not do it soon, we risk and jeopardize this one facet of the production of nuclear energy that we have been superior at and done extremely well.

So I am hopeful that again we will proceed with dispatch under your leadership, as we have three times before, and that the House would give it serious consideration. It is really time to get it done.

So I am pleased to be here with you. This is the subcommittee that you and I are ranking on. Presumably we will report this up to the full committee, and we will get on with it.

Senator Wallop, I am pleased that you support the basic legislation, and I share your concern about the Soviet supply. I also shared another concern with you today. I will talk a little bit about

DOE selling some of their uranium on the market, and at the same time being concerned about not having enough for themselves. I think that is affecting the market in a rather deleterious way, too.

Thank you very much.

Senator FORD. Thank you, Senator Domenici. I think you made one point, and made it very clear, even though it may have been in a kidding sort of way. Regardless of who is in control, this is a nonpartisan, bipartisan issue, and we have been trying very hard on this side to put it together.

Senator Craig, we are delighted to have you here. Do you have a statement you would like to make?

Senator CRAIG. No, thank you, Mr. Chairman.

Senator FORD. We are pleased now to have the Honorable Bob McEwen, U.S. House of Representatives from the State of Ohio. The timing has worked out very well. Bob, we are delighted to see you here, and you always make an impression when you enter the room. I want you to know we saw when you arrived. You may proceed. We are delighted you are here.

STATEMENT OF HON. BOB McEWEN, U.S. REPRESENTATIVE FROM OHIO

Mr. MCEWEN. Thank you, Mr. Chairman and members of the subcommittee. I am delighted to be here, and I have a statement that I will submit, and try to just hold this under 60 seconds.

The one thing that does need to be said, and very forcefully, is that you, Mr. Chairman, and members of this committee have expressed steadfast leadership and commitment to reviving the domestic uranium enrichment industry and for skillfully bringing the restructuring legislation to passage on the Senate floor for now two consecutive Congresses. As you know, the Department of Energy, the Federal Government operates the one and only uranium enrichment business in America. Given that the business supplies enriched uranium for 40 percent of our naval combat fleet, it is vital to our national security as the sole U.S. producer of enriched uranium for nuclear power reactors which generate nearly 20 percent of the Nation's electricity supply. The enrichment business plays a critical role in maintaining energy security.

Mr. Chairman, the rest of my testimony centers around your legislation and how vital it is to American interests, how vital it is that the Congress act upon it, and that message does not need to be directed here. It needs to be directed solely to the House of Representatives. The administration is supportive of your legislation. The Senate has shown its willingness to support it twice. It has been the House of Representatives that has missed the opportunity to keep this vital segment of our energy business available into the next century.

And I just am here to say that once you have acted again as you have so faithfully in the past, that I shall do all within my power to ask my colleagues, along with specifically Congresswoman Marilyn Lloyd of Tennessee and Congressman Carroll Hubbard of Kentucky, the three of us will work jointly together to do what the House of Representatives should have done long ago, and that is to pass your legislation. And I thank you very much for your leadership.

[The prepared statement of Mr. McEwen follows:]

PREPARED STATEMENT OF HON. BOB MCEWEN, U.S. REPRESENTATIVE FROM OHIO

Mr. Chairman, I am pleased to have this opportunity to appear before the Subcommittee on Energy Research and Development today to express my strong and continued support for establishing a wholly-owned government uranium enrichment corporation.

At this time, I would also like to thank the chairman, Senator Ford, for his steadfast leadership and commitment to reviving the domestic uranium enrichment industry, and for skillfully bringing restructuring legislation to passage on the Senate floor during the 101st Congress.

As you know, through the Department of Energy (DOE), the Federal Government operates the one and only uranium enrichment business in the United States. Given that the business supplies enriched uranium for 40 percent of our naval combat fleet, it is vital to our national security. As the sole U.S. producer of enriched uranium for nuclear power reactors, which generate nearly 20 percent of the nation's electricity supply, the enrichment business plays a critical role in maintaining energy security.

Unfortunately, the DOE no longer enjoys a monopoly in the world market for enriched uranium. In the mid-1970s, the U.S. supplied all the enriched uranium in the free world. By the early 1980s, we had lost more than 50 percent of the world market as a result of foreign competition and a wavering commitment to nuclear energy here in the U.S. A private business would have been able to respond rapidly to these changes and act quickly to cut its losses. The DOE enrichment program, hamstrung by government constraints and changing policies, lacked the necessary flexibility to adjust to a changing world market.

Simply put, as a government agency, the DOE cannot compete as effectively as the uranium enrichment marketplace requires. Ultimately, if the business fails, ratepayers dollars will purchase foreign enriched uranium (an increasing amount of which may come from the Soviet Union), taxpayers will pay more for enriched uranium for defense needs, and the government will be left to pay the costs of decommissioning and cleaning up enrichment sites whenever existing plants are shut down to make way for new ones in the next century.

Converting the business to an independent, government-owned corporation will give it the flexibility it needs to compete successfully in today's market. If uranium enrichment is to continue playing an integral role in meeting our nation's diverse energy needs, then the present enterprise must be transferred to a newly-created government corporation with the proper management structure, including a board of directors, and the authority to set prices for its commercial products.

Briefly, restructuring will bring about the following benefits:

> The taxpayers will benefit from a government corporation by realizing the maximum return on the government's investments since the corporation will pay dividends to the treasury. The value of the uranium enrichment business will be increased and maximum dividends will result from free-market operation.
>
> The nuclear electric ratepayer will benefit from the corporation by resolution of such issues as the amount of unrecovered government costs to be repaid, establishment of decontamination and decommissioning of the enrichment plants when they are shutdown in the future, and creation of a market oriented uranium enrichment organization.
>
> National security will benefit by creation of the corporation because a healthy enrichment business will ensure low prices for all customers including defense customers.
>
> Energy security will be enhanced through assurance of domestic uranium enrichment capacity over the long term so that the United States does not become overly dependent on foreign sources of enriched uranium.
>
> The balance of payments deficit can be reduced through capture of a larger share of the world enriched uranium market. Our balance of trade can be positively affected if foreign sales can be retained and increased. Approximately $500 million per year is realized at the present from sales of enrichment services to foreign customers.
>
> The nuclear power industry will benefit from a corporation by having a healthy domestic source of enriched uranium from which to fuel the nation's nuclear power reactors.

To highlight the importance of flexibility in operating in the international market, I would like to share with the subcommittee some comments made by Mr.. William Young, Assistant Secretary of Energy for Nuclear Energy, in his written statement today before the House Appropriations Subcommittee on Energy and Water Development. Mr. Young indicated that "a noteworthy change in the [uranium enrichment] market during the last year has been the emergence of the Soviet Union as a long-term supplier."

He goes on to say that in FY 1990, the Soviets made a significant penetration into the U.S. market by signing an 8-year contract, worth nearly $250 million, for sales to the Yankee group beginning in 1994. Having said this, it seems to me that the most effective means of giving the U.S. uranium enrichment business the greatest future commercial flexibility and of restoring its competitive edge is to pass corporation legislation.

The issue of transforming the DOE's uranium enrichment enterprise (UEE) into a government corporation has come before Congress a number of times in the recent past. It is my understanding that as early as 1987, the department recommended to Congress that the UEE be restructured as a federally chartered enrichment corporation empowered to behave in much the same manner as a private business corporation normally would.

As the subcommittee knows, the Senate has already acted on restructuring legislation by approving S. 83, the "Uranium Enrichment Act of 1989", only to see its efforts wither and die in the House. However, I am pleased to see that the chairman has again introduced restructuring legislation in this Congress—S. 201, the "Comprehensive Uranium Act of 1991."

To stimulate action in the House, I have again introduced the "Uranium Enrichment Reorganization Act" (H.R. 145), legislation to maintain a competitive, financially strong, and secure uranium enrichment capability in the United States. I have also requested that hearings be held in the three committees of jurisdiction at the earliest possible date in an effort to expedite consideration in the House.

I should also add that I am very pleased to be joined by Reps. Marilyn Lloyd of Tennessee, and Carrol Hubbard of Kentucky, in advancing corporation legislation in the House of Representatives.

Another key element to this debate that needs to be mentioned is the relationship between restructuring and the future development of AVLIS—the Advanced Vapor Laser Isotope Separation process. Through the AVLIS process, we can enrich uranium at a cost significantly below that of the current technology—an asset that will no doubt improve the domestic industry's ability to compete in the international market.

The Department of Energy's FY 1992 budget request of $213.6 million focuses on preparation for and completion of technology demonstration—and does not include any funds for activities leading to the deployment of an AVLIS production plant. DOE has clearly stated that "a decision on whether to undertake a plant will be deferred pending enactment of [legislation to transfer uranium enrichment activities to a government corporation]." Knowing this, then, puts a new premium on enacting restructuring legislation during the 102nd Congress, so as not to delay the department's timetable for deploying AVLIS.

Finally, in May of 1990, the investment firm of Smith Barney, Harris Upham & Co. Inc. conducted an independent financial evaluation of the UEE and pending legislation. The report issued by Smith Barney recommended, as a first step, the transfer of the UEE to a newly-created government corporation that would "operate outside of the political and bureaucratic environment that has historically affected the business operations of the UEE."

Mr. Chairman, we must begin now, this day, in this Congress, to lay the foundation for securing a more efficient and less vulnerable source of energy through enriched uranium. Our energy security depends on it. Our national security demands it.

Let us hope that by May of 1991, we find ourselves significantly closer to realizing the goal of securing a viable, competitive, and financially-sound United States uranium enrichment corporation.

Thank you, Mr. Chairman.

Senator Ford. Thank you, Congressman. Let me thank you for your efforts and that of Congresswoman Lloyd and Congressman Hubbard. You have to give DOE credit. They had been working very hard during the conference last year when Congressmen Miller and Sharp held fast, but we did get an agreement out of them that they would consider it early. I noticed in the Energy Daily that Congressman Dingell now is interested in it, and it appears that they are willing to at least bring it before the full committee, maybe.

And so let us hope that we will move it out. We are starting it earlier this time. We will have a little more time to deal with it. And we are grateful for your support. Does anybody have any questions they would like to ask the Congressman?

Senator **Wallop**. No, but I would certainly like to add my thanks, Bob, to those of Senator Ford. It would appear that at least this year we might get to the point of rational hearing in front of the full committee on it, so that it has an opportunity to be marked up and passed out. And if ever the country was going to get serious about the various segments of its energy strategy, it has got to be this year, as good a political time as either party has seen. And if we can do it with your help and through the same kind of success that I would anticipate having over here, maybe, just maybe we can get ourselves back into business in the competitive circumstance.

Senator **Ford**. Senator Domenici.

Senator **Domenici**. I want to thank you, also. It is good to have you here.

Senator **Ford**. Senator Craig.

Senator **Craig**. Mr. Chairman, thank you very much. It is a pleasure to see my colleague from the House. I say that because we came as freshmen together in 1980, and it has been my privilege the last 10 years to work with Congressman McEwen, and I always have appreciated your leadership in these areas. It is good to see you.

Mr. **McEwen**. Thank you very much.

Senator **Ford**. Thank you, Bob. We appreciate it.

Our next witness will be the Hon. W. Henson Moore, Deputy Secretary, U.S. Department of Energy. Mr. Secretary, we are delighted to see you, and we are very pleased that you would find time to be with us today.

STATEMENT OF W. HENSON MOORE, DEPUTY SECRETARY OF ENERGY, DEPARTMENT OF ENERGY, ACCOMPANIED BY WILLIAM H. YOUNG, ASSISTANT SECRETARY FOR NUCLEAR ENERGY

Mr. **Moore**. Thank you very much, Mr. Chairman. I will be joined today by the Assistant Secretary for Nuclear Energy, Bill Young, who will assist me in answering questions. Mr. Chairman, I am going to cut my testimony short and adopt the comments of you, Senator Domenici, Senator Wallop, and Congressman McEwen. I agree with everything you have said. These were the opening comments I was going to make, and so certainly we will just put that as a part of the record and let me proceed.

Senator **Ford**. Without objection, your statement will be put in the record.

Mr. **Moore**. I appreciate that, Mr. Chairman.

Mr. Chairman, we have got a very simple proposition that faces us with regard to the uranium enrichment exercise, and you classified it correctly. This is a business, and a business cannot be run like a government, and that is precisely what we are presently trying to do. We have got to get out of the business of running a business like a government and get it into a form that we are able to run like a business. And your legislation does that, and ultimately when the corporation proves successful we want to see it spun off and sold to the private sector. And it seems that the rest of the world is discovering privatization, Eastern Europe, even the Soviet block, certainly Great Britain before that, and yet we are hanging onto one of the last vestiges of a Government-owned commercial enterprise for reasons I just simply do not understand.

The basic question is simply this: Are we going to do something to spin off this enterprise in a fashion that will allow it to make a profit for the American people during the time the American people are still the owners of it, as now, and to eventually get a return on the investment—hopefully all of it, whatever that figure is, and there is some dispute over that, not in our minds but others—or are they going to get zero?

If we move with your legislation, in our minds it is very clear that we may be able to make a profit in the operation of this enterprise. Then we will be able to ultimately sell this enterprise as a profitable business, and just like anyone who sells a money-making business, get money back to the Treasury that long ago was invested in this business by the taxpayers. If we do not privatize it we are going to run into a point, at least in the year 2000 and perhaps before that time, where we are not going to be profitable. You are going to begin to go into the red and begin to lose money each year that you continue to operate it. You are certainly going to lose money in operating it after the year 2000, and eventually you are going to run it in the ground where one of the two plants, Paducah or Portsmouth, will have to be closed.

And those plants will have essentially zero value, because you have a contaminated plant. As any chemical plant today, any steel mill today, once it closes down, what is its value? About zero. You do not see it reopened. You do not see it sold. It is just a closed testament to a chapter in the history of industrialization. And that is not what we want to see happen here.

We believe very strongly that we can operate as a business in the form of a Government corporation. We believe that we are going to be much worse off if we do not do that, and this is something that some of the critics of this program need to stop and look at; what is the alternative to operating as a Government corporation. We believe if we continue to operate as we are doing now, we will eventually be left with only one operating plant. The other one you will have to close and it will have no commercial value.

The other plant will have to be operated for the Navy, to take care of its needs for enriched uranium for the nuclear power that is used by 40 percent of our combat ships. The cost to the taxpayer of doing that now, taking care of the Navy, is $120 million a year. The rest of money needed to operate the plant is obtained by selling enriched uranium at a profit in the civilian sector to civilian power plants. If we get out of that business, and I submit we will be forced out of that business as being noncompetitive if we do not get into a business-like mode of doing business, then the taxpayers will have to pick up the entire cost of operation of one of those plants to take care of the Navy. And the cost to the taxpayer will go from $120 million a year to $420 million a year.

So we are going to go from a situation of making a profit to be returned to the taxpayers, to having a tremendous loss to the taxpayers each year, and from having two assets that might eventually be sold at a profit for the taxpayers to two assets that are going to be worth nothing to the taxpayers. That is just the simple—I do not know how to make it any simpler than that to explain what we are facing, what you are trying to accomplish with your legislation, and the Senate has followed you three times before, and we have not been able to get the House of Representatives' to pay attention to this very simple mathematical business equation.

If you look at the advantages of operating as a corporation—let me run down them briefly. The operation of a corporation will be more flexible with respect to marketing, contracting, and administration. It will be removed from the Federal budget process, which needs to be slow and deliberative for the Government, but business has to be able to move quickly. It will be insulated from political and nonbusiness pressures. It will be able to institute independent, faster, more effective decision making. It will be able to instill a more aggressive, accountable, and manageable management structure and culture.

And I can give examples—whether or not to deploy AVLIS is the kind of thing you want a business to decide from a business perspective, not done politically. You also want the corporation to be in the position of being able to borrow money when they need it, and not have to come to Congress—as we did in Fiscal Year 1989 for a supplemental appropriation, and the whole business deal was waiting to see if this thing was going to make it through Congress or not, during which time you lose customers, you lose business, and you lose the ability to compete.

We believe that if it is put into the form of a Government corporation, the Government corporation will be able to provide reliable, competitively priced uranium. It will be able to establish a track record of successful operating and financial performance as a business, not as a government, but as a business which will attract ultimate investors and buyers. It will make capital funding decisions based on solely economic, rather than political, factors. It will generate revenues sufficient to support its share of the decommissioning and decontamination cost by about the year 2005, with the Government putting up the other half for its share due to the operation of these facilities over the years for defense purposes.

You will be able to maintain sales and increase profits, and it will demonstrate the commercial attractiveness of this business to people who will hopefully then want to buy these plants and go into that business. To the consumer, they will benefit from lower costs than would otherwise be the case for enriched uranium going into electricity production from nuclear power plants. And for the stakeholders, the shareholders, the taxpayers of this country, they will be getting a much greater return on their investment than any other way we can look at it.

We have just completed a reanalysis in the Department of Energy, a reality check, if you will, by asking are we certain this is correct, and I called the Chairman of the subcommittee the other day to report to him in advance of this hearing that we were now as certain as we ever were, after we looked at everything you could do with these plants—operate them as a Government entity, lease them out, sell them now, put them in a Government corporation, or just close them down now. We looked at all of those options, and we asked what does the taxpayer get back on each of those options?

And there is simply no comparison, no comparison whatsoever. The only way the taxpayer is going to come out getting back anything on any of this, and not winding up with the complete liability on any of this, is simply to put this into a Government corporation, as your legislation envisions. The administration very strongly supports this legislation and is looking forward to working with the committee to get it passed.

Mr. Chairman, I would ask that Assistant Secretary Young's statement be made a part of the record in its entirety.

Senator FORD. Without objection.

[The prepared statements of Mr. Moore and Mr. Young follow:]

PREPARED STATEMENT OF W. HENSON MOORE, DEPUTY SECRETARY, DEPARTMENT OF ENERGY

Mr. Chairman, Assistant Secretary for Nuclear Energy Bill Young and I are pleased to be here today to discuss uranium enrichment restructuring legislation. We would like to thank you, Mr. Chairman, for your unwavering support for the government corporation concept. Today, I would like to speak briefly about the importance of the uranium enrichment enterprise and the great need that exists for restructuring.

Successive Administrations and Congresses have reaffirmed that the uranium enrichment enterprise is vital to the national security and energy security of the United States. Most recently, this was confirmed by the vital role nuclear power plays in the Administration's recently released National Energy Strategy. In the coming decades, nuclear power will be expected to cleanly and safely meet a substantial portion of the additional base-load electricity generating capacity that the United States will require by the year 2030. Presently, enriched uranium provides the fuel for nuclear plants that generate 20 percent of the Nation's electricity—electricity generated without "greenhouse gas" emissions and acid rain precursors. Producing this electricity with fossil fuels could introduce an additional 5.8 million tons of SO_2 into the atmosphere each year. Additionally, foreign purchases of U.S. enrichment services currently reduce the trade deficit by $500 million annually. Furthermore, involvement in the international nuclear fuel cycle strengthens our voice in nonproliferation issues. And finally, in the national security arena, the uranium enriched at our facilities fuels 40 percent of the Navy's principal combat ships. The question, then, is not whether this important business activity should be sustained, but rather how it should be managed to best serve the Nation and maximize the total return on investment to the taxpayer.

As we face this issue again in the 102nd Congress, we are presented with two fundamental options. We can take action to address and correct the problems facing the uranium enrichment program, thereby helping to secure one part of our energy future and provide a return on investment to the taxpayer, or we can stand aside and do nothing, allowing the program to continue on its present path, most likely resulting in no return on the taxpayers' investment. For our energy future, balance of trade and national security, it is simply unacceptable to fail to act. Prompt action is the only way to provide a return to the taxpayers on their past investment in the program.

The enterprise is facing severe market pressures that must be addressed. Increasing competition from the Soviets, other foreign suppliers and a potential domestic supplier (Louisiana Energy Services) and excess worldwide capacity expose the enterprise's declining ability to compete. Organizational limitations will not allow the enterprise to effectively react to the changing market. Prompt action to correct this is needed.

History gives us a clear picture of what will happen if we do nothing. Once the sole supplier of enrichment services worldwide (in the 1970s), DOE now furnishes less than half the world's total demand. With a supply glut resulting from the introduction of new suppliers, a secondary market and aggressive Soviet marketing, the enrichment environment has become highly competitive. Due to the fact that providing commercial services for a fee is an atypical Government function and because we are not structured as a commercial business, we are unable to function with the freedom and flexibility our customers expect and demand in today's market. In the future, as in the past, if forced by non-commercial considerations to price enrichment services higher than the market will bear, the U.S. enrichment enterprise could lose the nearly $3 billion in sales at stake from 1996 through 2000. Coupled with the increased competition for sales in the post-2000 time period, this could conceivably result in the eventual loss of all our customers except the Government, which would force the taxpayers to absorb nearly the entire cost of the enterprise. The taxpayers would have to support almost the entire cost of the operation and infrastructure, pay a higher price for defense enrichment services, bear the entire cost of environmental restoration and of decontamination and decommissioning of retired facilities and be dependent on foreign sources of enriched uranium for a substantial portion of the country's electric power needs. Furthermore, this path would lead to the eventual shutdown of one of the enrichment plants due to the lack of sales and leave the other plant to produce enrichment almost exclusively for the military. In return for their past investment, the taxpayers would possibly be left with one enrichment plant of limited commercial value and additional costs to produce enriched uranium for the Government.

On the other hand, if we work together and take prompt action, we can provide the taxpayers a return on their past investment in the uranium enrichment program. A temporary government corporation leading to privatization could eventually adapt to and succeed in the competitive marketplace. It could institute management, financial, and operational efficiencies to assure competitive prices. It could be more flexible with respect to marketing, contracting and administration. It would be removed from the federal budget process and insulated from political and other non-business pressures. Management would be more closely focused on the business. As a private entity it could institute an independent, faster and more effective decision making process leading to management decisions made closer to the problems, thereby resulting in more cost effective solutions. It would be able to instill a new, more aggressive and accountable management structure and culture which would allow it to more effectively compete with other enrichment suppliers.

For example, such an entity would have more flexibility to make sound business decisions in the area of technical development, such as in the deployment and use of the Atomic Vapor Laser Isotope Separation (AVLIS) process. AVLIS appears to represent the future's most cost effective process of uranium enrichment and such an entity would be better able to assess the costs and benefits of the technology, acquire private sector investment in the technology and exploit the full value of all of its possible applications, based on sound business and market considerations and free from political interference.

With restructuring, it is the taxpayer that would ultimately benefit. The taxpayer would pay less for defense needs, have a secure, domestic source of enriched uranium for electric power, and see the trade deficit reduced through the export of enrichment services. After the government corporation achieved this improved performance, it would then have an established track record of successful operating and financial performance and could be sold to the private sector. The taxpayer would be the greatest beneficiary of the increased profits earned while it was a government corporation and the increased return when the corporation was sold. Restructuring the enterprise would allow for the improved performance benefits to be shared directly with the community—as consumers through lower costs and increased productivity and as stakeholder in the enterprise through a greater return on investment.

These benefits to the taxpayers cannot be achieved without decisive action and leadership. DOE has spent a great amount of time and effort studying this problem and assessing various solutions. Last year we hired the investment firm of Smith Barney to do an independent financial assessment of the uranium enrichment program. Our conclusion, supported by the analysis of Smith Barney, is that the way to get a return to the taxpayer is through the establishment of a government corporation and the eventual sale of that corporation to the private sector.

Even though DOE has taken internal steps to correct the problems of the program, organizational constraints too greatly limit our ability to properly and effectively compete with foreign and other private competitors. Without the passage of restructuring legislation, our ability to compete effectively will continue to decline. The inevitable result will be no return on investment to the taxpayer.

This Administration is committed to working with Congress to achieve passage of restructuring legislation. Further delay seriously jeopardizes the enrichment enterprise's ability to compete and survive—the DOE uranium enrichment enterprise simply cannot operate as effectively in a competitive world as a Government corporation leading to privatization could. I would be happy to answer any questions you may have.

PREPARED STATEMENT OF WILLIAM H. YOUNG, ASSISTANT SECRETARY FOR NUCLEAR ENERGY, DEPARTMENT OF ENERGY

Mr. Chairman, thank you for inviting me to testify before the Committee again this session. I am here to continue the dialogue we began last year regarding the establishment of a Government-owned uranium enrichment corporation.

The Administration has reviewed its legislative proposal for restructuring the enrichment enterprise, and we plan to reintroduce it to Congress very shortly in order for hearings to be held and legislation to be considered in a timely fashion.

We would be pleased to work closely with your Committee in passing a separate bill or overall energy legislation that contains provisions for a temporary Government enrichment corporation leading to privatization. As a first step in this process, we will be sending up legislation to propose a revolving fund, allowing the enterprise to clearly account for its expenditures and its offsetting collections.

There are several reasons why it has become even more urgent this year than last to make the uranium enrichment enterprise more competitive. This urgency will only continue to grow in the future.

The Administration's National Energy Strategy very clearly shows the need for expanded use of nuclear power for economic, energy security, and environmental reasons. Since uranium enrichment is a vital part of the nuclear power industry, an effective and competitive U.S. uranium enrichment enterprise is even more important to the Nation's future energy supply.

Though DOE's current world market share through 1995 is about 50 percent, firm contract commitments decline after 1995 to levels where our market share becomes 35 percent in 1996, 30 percent in 1999, and essentially zero thereafter. Competition for post-1995 sales opportunities and new commitments is already beginning. We must start to address this situation this year if we intend to retain a market share that can provide the greatest economic return to the enterprise. We have begun to make offers necessary to capture new sales in the 1996–1998 time period based on market conditions.

It would be far preferable to have a temporary Government enrichment corporation leading to privatization with a greater flexibility than we currently have, to pursue these sales in an increasingly competitive marketplace. For example, a corporation would be able to make attractive, competitive offers on an individual customer basis, as required in the buyer's market that currently exists, rather than on the more uniform basis that we are required by law to utilize.

Market challenges to DOE's uranium enrichment enterprise from growing competitive pressures represent another new reason for urgency in creating such an entity that can more effectively operate in such an environment. A noteworthy change in the market during the last year has been the emergence of the Soviet Union as a long-term supplier. Until recently, the Soviets have sold enrichment services at heavily discounted prices primarily on the spot market. In October 1990, the Soviets made a significant penetration into the U.S. market by signing an 8-year contract, worth about $250 million, for sales to The Yankee Group starting in 1994. This represented the first time that any U.S. utility had signed a long-term contract with the Soviets.

DOE has firm sales commitments from U.S. utilities through 1995 that represent about 90 percent of the total U.S. market. However, these firm sales decline after 1995 to a level representing only 56 percent of the U.S. market. Therefore, it is clear that the U.S. market represents an inviting target for all of DOE's enrichment competitors, including the Soviets. In fact, I understand that, in addition to the efforts of our current European competitors, the Soviets are making, and plan to continue to make, offers to U.S. utilities for post-1995 sales opportunities. As a result, the emergence of the Soviets as a potentially major long-term supplier in the United States is a serious market challenge that should be addressed promptly.

We are devoting special attention to the market challenge from the Soviet sale of enrichment services at heavily discounted prices—in the spot market and, particularly, in the long-term market. Conditions at this time prevent the U.S. uranium enrichment enterprise from addressing this situation from a commercial standpoint.

Thus, we hope that the Soviets—and prospective U.S. buyers—assure that their possible transactions are fully consistent with fair trade practices in a free market. We are monitoring existing and prospective Soviet sales in the United States to ascertain whether fair trade practices are being followed.

We need to have much greater flexibility in addressing market challenges, including the Soviet market challenge. It would not be subject to political agendas that could prevent prompt commercial solutions to market forces in a highly competitive market. As Smith Barney reported in their assessment of our enrichment business, a Government corporation with commercial flexibilities would be able to take steps in response to market challenges that will enhance return to the Treasury to a much greater extent than the current enrichment enterprise. Smith Barney specifically noted that the Government corporation, to the maximum extent possible, should operate outside of the political and bureaucratic environment that has historically affected business operations.

The United States currently has a strong technological advantage with its Uranium-Atomic Vapor Laser Isotope Separation (U-AVLIS) enrichment process. The U-AVLIS technology holds the promise of being able to enrich uranium at a cost that is 50 percent lower than any other enrichment technology. It is well known that the private sector is much better than the Government in bringing technologies to market use in a manner that generates greater return to the investor. This supports the determination made by the Administration, based upon policy considerations, that the Government should avoid investments in the uranium enrichment enterprise that could more appropriately be made by the private sector. Thus, Government expenditures for U-AVLIS predeployment activities have not been included in the Administration's FY 1992 budget.

With DOE's U-AVLIS development program nearing completion by 1992, a temporary Government corporation leading to privatization should be formed as soon as possible to support the earliest possible investment in, and deployment of, U-AVLIS technology. Such a corporation would be in the best position to make commercial decisions regarding timely market introduction and investment in deployment using private sector funds. DOE's current technology demonstration efforts for the U-AVLIS process are fully funded and proceeding on schedule for completion in September 1992 to support these commercial decisions.

The technical progress of U-AVLIS demonstration efforts continues to meet our expectations. Three major milestones have recently been achieved that are critical initial steps leading to full-scale technology demonstration testing. In March 1990, the U-AVLIS copper laser system was operated at 8000 watts; the power level that will be required to conduct technology demonstration tests. In June 1990, a preferred U-AVLIS feed conversion process was identified that will be used as part of the technology demonstration. In October 1990, the integration of laser light with the U-AVLIS separator was achieved as the initial introduction of light in the demonstration system that will be used for full-scale tests in December 1991.

As recently as the week of January 21, the operation of a prototype of the U-AVLIS separator system began. Integrated testing of laser and separator systems will begin in December 1991 with completion of a full series of planned tests by September 1992. This effort is expected to successfully produce the technical and economic information required to make future commercial decisions about market deployment of the U-AVLIS technology.

The importance of taking advantage of the technical and economic benefits of the U-AVLIS technology is further highlighted by the emerging competition from a potential U.S. enrichment plant that is being planned by the Louisiana Energy Services (LES) Company. Based upon the less advanced gas centrifuge enrichment technology that is being used in Europe by Urenco, LES filed a license application with the Nuclear Regulatory Commission and is proceeding with plans to build a plant in Louisiana. Again, the temporary Government corporation represents the best means by which our existing enrichment enterprise can exploit the technological and market advantages of U-AVLIS technology and promptly address the competitive challenge of a future U.S. plant using European technology.

We have reconsidered the alternatives available to the current uranium enrichment enterprise and have once again concluded that a temporary Government corporation leading to privatization is the best answer for the future. The arguments that we have put forward in the past are still valid. For example, in addition to the benefits already cited, it would be better able to attract and retain personnel with strong business experience and proven ability. It would allow greater focus on decisions based on business principles and financial discipline. It could clarify and centralize authority, responsibility and accountability.

A specific example concerns the ability of a Government corporation to apply funds promptly when needed to maximize revenues and minimize costs. In FY 1989, efforts to gain approval to spend $30 million to purchase additional power in order to save $60 million in costs during FY 1990 were delayed by nearly 6 months. This benefit was nearly lost as a result of the Government's review and approval process. Another sound business practice for which Congressional approval has been requested, but denied, involved the potential purchase of enrichment from other sources at prices below our incremental cost of production. This action is one that commercial businesses routinely exploit to their economic advantage and that a Government corporation could act promptly to implement.

The ability to generate and then set aside surplus funds to cover future liabilities would be a further benefit from a Government corporation. The Administration will propose legislation to create a temporary Government corporation and assign the decontamination and decommissioning (D&D) cost liability for the existing enrichment plants equitably between commercial customers and the Government. It also establishes an interest bearing fund in the Treasury for deposits by such an entity for the commercial share of this future liability. As a result, such an entity offers much better prospects of assuring that the commercial share of future D&D costs, currently projected to be $1.5 billion, are covered by future revenue collections from commercial customers, thereby avoiding any additional taxpayer obligation.

Finally, a well managed enterprise using businesslike principles will be able to continue and even strengthen the current contribution of about $500 million made by the enrichment enterprise to reducing the trade deficit. Since firm sales from foreign sales decline after 1995, only a strong commercial entity can be expected to maintain and possibly expand foreign sales in a post-1995 marketplace and thereby enhance our trade deficit position.

We believe such an arrangement best addresses the need to create an enrichment enterprise that provides the greatest value to the taxpayer without reliance on any additional burden or taxes on the business or its customers. The Government corporation should still be subject to the apportionment control of the Office of Management and Budget (OMB) and should submit its budget first to OMB and then to Congress. Speaking specifically to the provisions of S. 210, we have some concerns and comments that we will provide separately in the near future.

Let me close by returning again to the urgency of passage of new enrichment legislation by the Congress as the most effective means to give the U.S. uranium enrichment enterprise the greatest future commercial flexibility and competitive edge. The enterprise is a business that does not belong in the Government, where politics and the annual budget cycle all too frequently hamper effective management.

If we continue to run the enrichment enterprise as a Government program, we may become unwilling participants in the eventual demise of a very valuable national asset. Our other choice is to establish a temporary Government corporation leading to privatization that will operate as a financially strong, competitive commercial business that provides the greatest return to the taxpayer. The preferred choice is clear. The Department stands ready to give its full and dedicated support to the early passage of legislation to create a temporary Government enrichment corporation leading to privatization.

We look forward to working closely with you, Mr. Chairman, your Committee and the Senate in making such legislation a reality at the earliest possible time. The long-term success of the U.S. uranium enrichment enterprise and nuclear power depend upon such timely and long-overdue actions.

Senator Ford. Thank you very much, Mr. Secretary. I always like to hear smart people approve of things that other Senators and I do. So I give you credit for being smart in this particular case. Secretary Moore, 10 months ago we were told that DOE had lost approximately $1 billion worth of contract commitments. What is the current figure? Is it still that same amount, and how many customers did we lose, and so forth? And kind of give us an idea, if we continue on this path to substantiate what you are saying, about the year 2000 will we probably be at a negative figure rather than a positive figure?

Mr. Moore. We just missed a sales opportunity, I know just in the last few months, a long-term contract. The first opportunity we lost recently was to the Yankee Utility Group worth $250 million in sales.

Senator **Ford**. Is that annually?

Mr. **Moore**. No. That is the total of the contract.

Mr. **Young**. It is still over $1 billion.

Mr. **Moore**. We think it is still over $1 billion, and the most recent example was the Yankee contract of $250 million.

Senator **Ford**. What about, you mentioned environmental clean up. Plants close, you say it is a tombstone to industrial history. What impact has the Clean Air Act amendment had on the estimates of environmental clean up cost?

Mr. **Moore**. Well, the Clean Air Act, through the requirements on the coal-fired utilities that sell electricity to us, which is our highest raw material cost, will increase the cost of that electricity generation, which will increase the cost of our bottom line. I am not sure what effect it has had on D&D.

Mr. **Young**. We have some specific numbers. The Clean Air Act will change our production cost. It will add $13 per SWU starting in Fiscal Year 1997, and by Fiscal Year 2000 it will add a total of $21 per SWU to our costs.

Mr. **Moore**. We are looking at the year 2000, or a little sooner, at a marginal cost per SWU of about $60. And so you are talking about raising the marginal cost from $60 to $73, and ultimately up to $81 a SWU, simply by that legislation.

Senator **Ford**. That is what it costs to produce it and put it on line and prepare it for sale?

Mr. **Young**. Yes. That is the cost of electricity, and through the year 2000 there would be a total of about $800 million of added cost.

Senator **Ford**. Well, did we not clear up the problem with the utilities in that piece of legislation, the Clean Air Act? I thought we had made some progress.

Mr. **Young**. There was a problem that these particular utilities were being singled out for further treatment. That problem was cleared up, but they got the same treatment as all other coal burning utilities.

Senator **Ford**. Mr. Moore, you talked about AVLIS. You said that AVLIS will be the most, and I quote, "most cost effective," close quote, way to enrich uranium, and you say that the new corporation will be better able to deploy it than DOE. Most of us would agree with you on both of those points, I think.

What you do not say is that DOE has decided not to deploy AVLIS. In your budget request this year you do not ask for any funds for AVLIS deployment. If the corporation wants to build AVLIS some day, fine, but DOE will quit when the research is done. That might be all right if this bill had passed several years ago, but we do not have the corporation yet. It certainly is not ready to start building AVLIS. If DOE drops the ball now, I wonder if the corporation will ever be able to pick it up.

And I do not want to belabor the point with you, Mr. Secretary, but I will include some statements on the importance of getting on with AVLIS in the record. The statements are from this committee's report on your 1992 budget request and from the Appropriations Committee's report on your fiscal year 1991 report. And if you want to take any shot at that, you can.

[The information follows:]

Except From the Views and Estimates Report of the Committee on Energy and Natural Resources for Fiscal Year 1992

The Committee is also concerned about the Administration's decision not to request funding for deployment of an Atomic Vapor Laser Isotope Separation production plant. The Administration has made the decision that all future capital investment in new enrichment plants should be made by the proposed government corporation rather than by the Department of Energy. Thus, while the President's budget requests a 38 percent increase in funding to complete the demonstration of the Atomic Vapor Laser Isotope Separation (AVLIS) process, this funding is for additional research and development and not for activities leading to the supported development of an AVLIS production plant. This Committee has long supported development of AVLIS as a more energy-efficient and commercially competitive way to enrich uranium than the Department of Energy's aging gaseous diffusion enrichment plants. The Committee views the Administration's decision not to pursue deployment of AVLIS as yet another reason why enactment of legislation to set up the corporation is imperative.

Excerpt From the Report of the Committee on Appropriations on the Energy and Water Development Appropriation Bill, 1991 (S. Rept. 101-378, pp. 129-130)

The Committee is concerned that the necessary actions are not being taken on a timely basis to assure that it will be possible to deploy U-AVLIS technology at the earliest practicable date following technical demonstration of plant scale equipment. The Committee has strongly supported the development of U-AVLIS technology to provide this country with a low cost, reliable source of uranium enrichment services well into the next century to help retain the U.S. competitive advantage and leadership in uranium enrichment. This is necessary because the existing gaseous diffusion plant (GDP) complex is approaching the end of useful life. There is the prospect of very large and continually increasing expenditures being required for environmental, safety, and health upgrades to bring the GDP facilities into compliance with modern standards to support continued operations.

The U-AVLIS plan provided to the Congress in January 1990 focuses on two major events in 1992, technology demonstration with plant scale equipment and a decision concerning future plant deployment. However, additional actions are needed immediately to provide greater assurance that a U-AVLIS plant can be designed, constructed, and placed in operation at the earliest practicable date following a deployment decision. Actions which are needed on a priority basis include:

> A preferred site for a U-AVLIS plant should be selected promptly so that critical design work can proceed to enable plant deployment at the earliest practicable date. Alternate sites should be evaluated against the preferred site as part of the environmental review process. Sites considered for the preferred site should include advantageous green field sites as well as existing DOE sites.
>
> A plan should be prepared on a priority basis establishing the steps necessary to minimize the schedule for plant deployment. Particular care should be given to establishing a process for successfully meeting regulatory requirements to avoid delays.
>
> An industrial entity should be selected as soon as practicable to take prime responsibility for managing and integrating all deployment activities from conceptual design through delivery of an operating plant.
>
> A dedicated U-AVLIS project organization should be established within the DOE which is independent from the current uranium enrichment organization so that the focus on this high priority effort is not diluted by the many demands arising daily from ongoing operations.

Implementation of these priority actions will provide increased assurance that the U-AVLIS program will be adequately prepared to achieve plant operations at the earliest practicable time following a decision to deploy U-AVLIS.

Mr. Moore. Mr. Chairman, we all believe that AVLIS is the technology that will make this enterprise the most profitable in the world over our biggest competitor now, which is the gas centrifuge used by the Soviets and by Europe.

Senator **Ford**. Would you repeat that statement?

Mr. **Moore**. AVLIS will be, without a doubt in our mind, the most efficient way to enrich uranium. It will give us a decided cost advantage in operations over our competitors in Europe, the Soviet Union, or even in the private competitive plant that is going to be built in my home State of Louisiana, the Louisiana Energy Services Plant. We believe, and we hope this is a temporary respite, and this is something we have got to rethink, all of this. If we fail in this Congress, Mr. Chairman, in passing the enrichment legislation, such as you have offered, we are going to come to a parting of the ways pretty soon. We have got to be honest with the House of Representatives, where the obstacle seems to be about what is going to happen if we do not do this this year. AVLIS is a perfect example.

What the administration is saying is that the Government has done its part. It has footed the bill for all the basic research. It has footed the bill and now built a laboratory prototype that shows it works. All that is necessary now is to take that technology, mock it up, and apply it in the industrial sense. The administration is saying that the decision really ought to be made by the corporation that is going to have to pay for it.

If we get the corporation passed this year we are going to lose somewhere between 6 months and a year off the original time table for having AVLIS actually deployed and operating. If we do not make the decision this year in the Congress or next year, to create the corporation, then we have got to sit down and assess where are we. Are we going to continue this enterprise as a Government enterprise, or are we going to get out of it?

And that is the basic decision that this Congress should come to grips with. The Senate has begun this year, and I hope will pass legislation for the fourth time, but I think the other body has got to answer the question if this is not the answer, what is? What do they want us to do? Shut these things down or run them into the ground? Forget it? Run one for the defense, or what?

Because I think sooner or later we have got to make the decision you are talking about, are we going to start building AVLIS. And the Government, quite frankly, there are some in the Government who have real questions about continuing this enterprise as a Government entity, either spin it off into the Government corporation, ultimately privatize it, or get out of it. That is how some people think in the administration. And so at this point if we do not get your legislation into law this year or early next year we have got to rethink the whole future of this.

Senator **Ford**. And as I understand what you said earlier, that if this is not passed and we continue to operate it as the Government, the business as if it was Government, because the law is so old, that we will be down to a point where we will just be making enriched uranium for the Navy, and at a cost to the Government of about $120 million. But then when these contracts work out it will cost us $420 million. So therefore we lose almost a half a billion dollars annually, compared to the possibility, and what we are all convinced, even with the Smith Barney report saying that we can start making a profit.

Mr. **Moore**. Mr. Chairman, you are absolutely right. We have got some figures here that show that between 1986 and 1990 we have paid back, I think, $400 million to the Treasury. If we get out, if we decide we are just going to run this enterprise into the ground and take care only of the military, you are losing that kind of a cash flow to the Treasury, plus you are increasing your cost to the Treasury—there will be no return to run it for the military, the Navy. Plus you get zippo, nothing back on your two plants you have that will have no earthly value. If you run these things as a Government enterprise down to where they are valueless, who is going to buy them? And so the taxpayer comes out the net loser the whole way around, increased appropriations going out, less money coming back, and no value left with these two plants.

Senator **Ford**. And then of course the taxpayer will have to pay the decommissioning cost.

Mr. **Moore**. 100 percent of it.

Senator **Ford**. Where now we are transferring that to the Government corporation?

Mr. **Moore**. We are transferring half of it.

Senator **Ford**. It is just awful hard to see how some of these letters I get from certain unions around town that like taxpayers that tell us how much money we are losing and how much money we ought to pay back, and all that money is for the Navy, we are furnishing it for the Government. And it had to be built.

But anyhow, one thing that bothered me just a little bit, and this will be my last question, for a few moments anyhow. It seems to me, Mr. Secretary, and I am not quite sure I am right, but it seems like to me you took the $50 million that would have gone to the deployment of AVLIS and put it into Lawrence Livermore Lab for more research. It seems like to me you said it was right now at a point where it would be put into commercial operation. Am I wrong in that?

Mr. **Moore**. You are not entirely correct. We have gone through some of that funding——

Senator **Ford**. For a fellow 67 years old who can remember enough that he is partially correct, I am complimented.

[Laughter.]

Mr. **Moore**. Well, you are probably more than partially correct. Bill will outline how we broke up those funds.

Mr. **Young**. There really were two separate decisions. We decided that to complete the demonstration, the technological demonstration at Lawrence Livermore Laboratory of AVLIS, that we needed another $71 million in Fiscal Year 1992 over and above the 1991 level. That was one decision.

The second decision was whether to expend $54 million on predeployment activities, and the decision was made that that would be deferred to private sector investment.

Senator **Ford**. Well, Mr. Secretary, DOE has asked for authority to buy cheap Soviet SWU's to resell to its customers, and there are other options, I am sure, for meeting Soviet competition. But can the corporation meet the Soviet price and still recover its cost?

Mr. **Moore**. It obviously depends upon what the Soviets are selling for. Some of their recent spot prices, no. We have got to get somewhere in the neighborhood of, today, at least $65 to $70 a

SWU, we have never sold that cheaply, to be able to make any kind of a profit or a return to the taxpayers operating on the margin. Some of the Soviet SWU sales in the spot market have been below that. And so it depends upon what they are selling at, but we have run into situations where they are selling at below what we think it can be manufactured for, and certainly below what we can manufacture it for.

Senator FORD. Would there be incentive if we are near competition for the American customer to buy here because of the dependency of furnishing the SWU?

Mr. MOORE. As opposed to foreign?

Senator FORD. Yes.

Mr. MOORE. What we are running into, and we ran into this with two recent bids, trying to maintain a part of this commercial market from now until the year 2000, which is sort of a drop dead date in all of this, what we are running into is it seems that utility companies, because of the quality of the material coming out of the present Government-owned enterprise vis-a-vis certain foreign suppliers, and because of the security of getting it from us, they are willing to pay a little something of a premium for that. In other words, they will not go dollar for dollar. We can be a little bit more expensive than the foreign competitor, but not a whole lot.

Senator FORD. Fine. Thank you. Senator Wallop.

Senator WALLOP. Mr. Chairman, thank you. Henson, I hope your statement on the efficiency of AVLIS reaches the press. I even more hope it reaches the members of the House of Representatives, because it is important to us.

I want to follow on a little bit, because I think Senator Ford has covered the domestic side of this about as well as it needs to be, but has the Soviet Union increased its marketing activities since 1989, when Admiral Watkins at his confirmation hearing expressed his opinion that the sales of Soviet SWU's to U.S. utilities posed a very real threat to DOE's market share? Have they increased their marketing activity?

Mr. MOORE. Yes.

Senator WALLOP. In your judgment, are they dumping some of the SWU's?

Mr. MOORE. Dumping is obviously a technical term. Dumping has to mean, in the technical sense, two things. Number one, as you well know, that they are selling it on this market at less than their cost of production. And secondly, we are suffering material injury from it. We were in a position last year on their old gas diffusion process to be able to say in our opinion they were selling it for less than what it cost them to manufacture it. They have now seemed to be moving to using SWU's coming out of a gas centrifuge process now, which is more efficient, so we do not have a calculation today as to how they are doing. We believe we will have something like that by about April 15.

But we believe that they are now selling SWU's on the spot market or in the United States at less than the cost of production of this more efficient technology. As far as the damage is concerned to us, we now think we are in a position to be able to demonstrate that we are now suffering a material damage. That was a threat or a fear in 1989, it is a reality in 1990 and 1991. And we cite the recent Yankee Utility Group contract as an example of that.

Senator WALLOP. The DOE has underway an analysis of Soviet marketing and pricing practices?

Mr. MOORE. As best we can. As you well know, it is awfully difficult in dealing with a State economy to ever pin down what real costs are. But yes, we are doing it to the best of our ability.

Senator WALLOP. In DOE's 1991 and 1992 budget request, the administration indicated its interest in buying Soviet uranium and SWU's to meet its contractual obligations to U.S. utilities. What quantities of SWU's are involved in there, and why would we be doing this?

Mr. MOORE. Well, we are not sure. We do know this. It is not just Soviets. We are looking at Italian and German and others, as there are people from time to time, this is true in any business, they wind up for one reason or another having an inventory that they want to dump for whatever reason. Dump is not a good term, but they want to sell and to get rid of it for one reason or another. And if you are in the same business, very often you can pick up that inventory, maybe they are going out of business or maybe they are just out of that phase of it, you can pick up their inventory and resell it to your customers, your normal customers, and make a profit, cheaper than you could manufacture those same SWU's.

And all we are simply saying is that if this is going to be a business, this business ought to be able to do that. It does not affect employment. We have to have the same number of people at work to manufacture one SWU as we do almost any capacity of SWU's; so if we can go out there and purchase SWU's somewhere in the world market cheaper than we can manufacture them, it enables us to sell those while we are still maintaining our same operational overhead at the Department, and wind up making a profit.

And so at this particular point that is something we are asking the Congress to look at, is to allow us to operate as any prudent businessman would.

Senator WALLOP. I would suggest to you that it is hard to call it dumping when the private sector is purchasing there and it is wise business practices when the Government purchases there. That distinction may be lost on some, and I think would weaken the government's dumping case. How, if these purchases take place will DOE structure these purchases to avoid injury to the domestic uranium industry?

Mr. MOORE. We simply, we have got—we have had some preliminary thinking about it, but obviously we have got to be given legal permission to do this before we really try to structure a deal of any kind. We have had some preliminary discussions with the Soviets, I think almost anything is open. The idea would not be to disenfranchise or to in anyway hurt any domestic buyer. The idea would be for us to be able to buy those SWU's to be able to sell them on the market, whatever the market will bear, at a profit to the U.S. Government, to the very same people or perhaps different customers that might have been buying from the Soviets.

But the idea is not to do anything to disadvantage any American utility company. The idea is to have this business that the taxpayers own make a profit.

Senator WALLOP. Well, I understand. It is a thin judgment line I would say, but I understand what you are saying. At least it is nice to hear the Government contemplating running anything as a business. Our hope is finally to get it into the private sector entirely so you would not be faced with that.

Mr. MOORE. Our problem, Senator, is between now and then we have got to try to run it as a business to stay in business. And I fully agree with you, we would love nothing better than to have this Government corporate board with some distinguished business person running this Government corporation make that decision. But in the interim, Smith Barney has advised us, and they are prudent business people, that we are foolish if we do not look at that opportunity, which any other business would do if they had that opportunity, to be able to buy an inventory of something at below market price and below your manufacturing price and then sell it and make a profit on it.

Senator WALLOP. So long as you did not in the process eliminate the basic source of supply by making it economically unviable—I am talking about the domestic producer.

Mr. MOORE. The domestic producer at this point is us. Our indication is certainly we are not talking about replacing our capacity. The problem is, though, I think that that stuff is going to find its way into our market anyway. The trick is that we would love to be the one to make the profit, rather than some international broker or whatever. But your theory is absolutely correct. If that was not going to come into the American market, if we brought it into the American market, you are correct, we are displacing raw uranium from this country.

Senator WALLOP. That brings me to my last two questions. Yesterday we furnished your office with legislation that I am considering introducing which is intended to protect the U.S. industry from the threat posed to our national security and defense interests by Soviet uranium sales practices. Before proceeding with the second question regarding the draft measure, would you care to comment on the proposal, or have you had time to review it?

Mr. MOORE. We will certainly give you a written, thorough analysis of it, and while we think we have gotten a lot faster at DOE, we have not gotten overnight service yet on bill interpretation. We appreciate your favoring us with the legislation. I got a briefing on it this morning. You have certainly given the legislation some thought. You may well accomplish the purpose that you are going after. I am not sure but what there may be some problems with it within the administration, and we will try to get that to you very quickly, of who is objecting to what.[*]

Senator WALLOP. It would not surprise me if there was, but we still have to look at it. Let me ask you this. Would the Federal Government benefit from more information on the country of origin for uranium or uranium enrichment services?

Mr. MOORE. Yes. We think there are some indirect sales going on now that that would be of help.

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[*] The information can be found in the appendix.

Senator **Wallop**. My last question is if the principal objective of the legislation before this committee is to assure that DOE's uranium enrichment enterprise remains economically viable, are the Soviet Union marketing practices of sufficient threat to DOE or the corporation that would follow it that consideration should be given to requiring that a certain minimum percentage of uranium be enriched within the United States?

Mr. **Moore**. Well, I do not know that I come to the conclusion you come to. I certainly agree with you that the potential threat is as grave as you perceive it. We each see the possibility from what we know now, but perhaps one-third of our market could conceivably go to the Soviet market, and that would be a great loss to this enterprise.

Senator **Wallop**. Well, under the U.S.-Canada free trade agreement and under GATT, national security has a legitimate statement to make with regards to indulging in some measure of protectionism. I would hope that we would feel that the national security was a consideration and put that at least at as high a level as our interest in free trade.

I am probably as strong a free trader as there is in Congress, but I also believe that I do not want to see the United States become dependent upon Soviet uranium or enriched uranium to the extent that we have become dependent upon Middle Eastern oil.

Mr. **Moore**. The National Energy Strategy speaks to this idea of energy security. It also speaks to the enriched uranium as being part of that. And so yes, that is part of the equation.

Senator **Wallop**. Thank you, Mr. Chairman.

Senator **Ford**. Senator Domenici.

Senator **Domenici**. Thank you very much, Mr. Chairman, and I do hope to be brief. I understand that Margaret Thatcher is on the floor of the Senate, and I, certainly knew Senator Wallop would be interested. I was trying to encourage him to go and I would take his place here, but maybe we will be finished before she leaves, so we can get that done, also.

Let me tell you my concern, Senator Wallop. First, let me say it is good that we are worried about whether we have the uranium industry, but frankly, it is already too late, so we do not have very much left. In fact we do have some left in the State of Wyoming. We do not have very much left in a State like mine, which used to produce most of it. We have just about given up on the issue of national security versus uranium because of Canada, I cannot imagine that they would be perceived at this late date to be a supplier that is not reliable. So one of the reasons we never found the security interest is because our principal international supplier was Canada.

But let me tell you, nonetheless, that maybe the Department of Energy is becoming more of an enemy to what little uranium mining we have left in the country, and I am not now talking about enriched. But since the issue came up, I wonder if you have in front of you the biweekly report from the editors of Nucleonics Week. Do you have that in front of you, Mr. Secretary?

Mr. **Moore**. Yes, Senator.

Senator **Domenici**. That is dated March 4. DOE is expected to solicit interest from commercial firms, purchasing nearly 7.5 million pounds of U-308 equivalent of material that is now at DOE's Feed Materials Production Center at Fernald, Ohio.

[The article follows:]

[Nucleonics Week, March 4, 1991]

DOE EXPECTED TO SELL MILLIONS OF POUNDS OF URANIUM NOW AT CLOSED FERNALD PLANT

DOE is soon expected to solicit interest from commercial firms in purchasing nearly 7.5-million pounds U3O8 equivalent of material that is now at DOE's Feed Materials Production Center near Fernald, Ohio. The material, in various forms, is considered excess to government needs. A similar solicitation for approximately the same quantity of uranium material at DOE's Hanford Reservation is also expected, although the timing of that request is less certain.

According to DOE officials, the Fernald solicitation, which will appear in Commerce Business Daily, is in the concurrence chain within the department. A department schedule calls for it to be published before the end of May. Sources indicate that Cogema and British Nuclear Fuels plc have expressed an interest in the material.

Responsibility for the Fernald facility was transferred October 1, 1990 from DOE's Office of Defense Programs to the Office of Environmental Restoration & Waste Management. Defense programs, however, will handle the disposition of the uranium at the site.

According the DOE's closure plan for the Fernald plant, the department has on site 455 metric tons uranium (MTU) of normal uranium existing as oxides, UF4, and metal; 1,600 MTU of low-enriched uranium (LEU), also existing in the forms of oxide, UF4 and metal; 107 MTU of LEU as refinery liquid; and 673 MTU (in 6,858 drums) of recoverable LEU residues. The enrichment levels of the material varies from slightly above natural up to about 2%. About 150 kilograms of uranium, enriched to between 5% and 20% U-235 are also at the site.

Also at Fernald are 1,084 MT of thorium, 131 MT of which DOE describes as high quality oxide. DOE says that informal contacts with the Canadian office of Rhone-Poulenc indicate that the company may be interested in obtaining some or all of the inventory.

There are also 7,031 MT of depleted uranium in the form of metal at Fernald, as well as 35 MTU of depleted UO3 and 1,821 MTU of UF4.

At the Hanford reservation, there are approximately 2,800 MTU of LEU, mostly in the form of metal.

The Fernald facility began operating in 1953 to produce high-purity uranium metal products for other DOE defense program plants. Its products included uranium derbies, ingots, and billets, as well as fuel cores and target elements for DOE's production reactors.

Production at the plant peaked in 1960 and 1962 with deliveries of approximately 10,000 MT. After then, production demand slipped to a low of about 1,230 MT in 1975.

During the 1970s, when consideration was given to closing the plant, capital improvements were minimized, DOE said. In 1981, however, planning commenced to resume near-capacity operation in support of projected depleted uranium product demand by the U.S. Army Tank Armor Command.

But placement of the N reactor at Hanford in cold standby in 1988 and the subsequent reduction in operating levels of production reactors at DOE's Savannah River Reservation resulted in a significant decrease in Fernald's production requirements. Production at the site was suspended in July 1989 to focus on environmental cleanup and has never resumed. DOE said that future department needs for uranium product will be met by commercial vendors.

DOE is under pressure from both the state of Ohio and the federal Environmental Protection Agency to decommission and decontaminate Fernald as soon as possible.

Senator DOMENICI. I wonder, if I have a constituent who is trying to stay alive, doing some very unusual production of uranium in New Mexico, and the indication is that while we are worried about Soviet Union spot market uranium sales, DOE is coming along with this advertisement.

His contention is that DOE is either out of natural uranium inventory at its enrichment plants or will be very shortly, and that plans to use, in the very near future, utility-owned, that is customer-owned inventory as working inventories.

His contention is you will soon be using customer-owned inventory that the utilities own for your working inventories. He suggests that we ought to keep that for our overfeeding purposes, and that we should not be selling this kind of stock on the market.

I frankly did not know this was occurring, and I guess I would ask you first what you think about the concern that some people in the private sector have about this apparent commitment to sell some of our government-owned uranium. Could you answer his concern here today?

Mr. **Moore**. Let me first say that we were not aware of this until we saw this this morning. This has not yet come to the Secretary's level, to make a decision on this kind of a thing.

You are absolutely right, that anytime the Government sells a stock of anything, whether it is corn or housing as we are selling off now, or depleted uranium or whatever, you have to be careful that you do not interfere in a weak market, with people who are trying to survive in that market.

And that is true with any Government stock of anything. What we are up against, I know from Fernald, that we have got to try to take into account is that one, we have an asset that many argue we do not need, and we ought to try to make use of that.

We are under pressure to reduce the deficit, as you well know from your Budget Committee work, and anything we can do to sell off Government unneeded stocks, we ought to be doing for the benefit of the taxpayer.

And the second side of the equation is, this is a constant environmental problem for us. We are trying to close that site down, any time we have anything radioactive stored there, we have a problem.

So our problems are those two, but we are very sensitive to what you say, and I will check, certainly before this matter is decided by Admiral Watkins, to be sure we have taken into account your concerns.

Senator **Domenici**. Well, let me make certain that you understand my position. I was not one who objected to the SPRO management by the President, as recommended by the Secretary, at the peak of that spike in oil prices.

I understood SPRO, and everybody understood that it had some qualities to it that he managed quite well, and it did put a damper on the up and down prices of crude oil.

So I was not saying we should never do things like this, but this one really bothers me because it seems to me we are kind of surprising the private sector in a sense. You have them out there struggling to get ahead in this field, and I really think we ought to know a little bit in advance and know more about any intention to dispose of large quantities of Uranium-308 on the market.

And I wonder if you could inform the committee of it. In the mean time, I will get it, if you inform the committee.

Mr. Chairman, I assume the subcommittee would be interested in knowing about this.

Senator **Ford**. Absolutely.

Mr. **Moore**. Senator, you are absolutely right. We will do it. And I would argue that if this is the case, that we try to make every effort to make the sell-off of that material a gradual one. You do a little bit each year in the market, rather than dumping it in 1 year or 2 years, to try to prevent that damage to the market.

Senator **Domenici**. I have no further questions.

Thank you very much, Mr. Chairman.

Senator **Ford**. You mentioned, Mr. Secretary, that the Department recently reexamined all the options for the enrichment plants, you ticked them off there, I think. Let DOE keep running them; lease them out; put them in a Government corporation; or shut them down.

Mr. **Moore**. Or sell them off right now.

Senator **Ford**. Could you provide for the record the pros and cons of each of those options you looked at?

Mr. **Moore**. Yes, sir, we will. The study is not one that is in writing. It was kind of a quick-and-dirty analysis. We are now trying to look into a better, deeper analysis, but certainly we can give you the pros and cons that we used in what we call a reality check, as Smith Barney cautioned us. We still think we are being realistic, and that is the only realistic choice to the American taxpayer is your legislation.*

Senator **Ford**. The cost to the taxpayer, I think was one item in there, I am not sure——

Mr. **Moore**. Yes.

Senator **Ford**. Mr. Secretary, I have a couple of questions here that Senator Wellstone left for me, and I am not sure you can give the answers now. If you cannot, you can for the record.

He says, when laser isotope separation was first proposed as a way to enrich uranium and to separate plutonium, serious concern was expressed that when this technology was developed, it would become a significantly cheaper, easier way for countries to obtain highly enriched uranium or weapons-grade plutonium, and that way it might become the preferred path to nuclear weapon proliferation.

Is the laser enrichment technology to be funded by this legislation capable of producing weapons-grade uranium, weapons-grade plutonium? And part B, if that is yes, would you comment on the potential of this technology?

You want to answer this for the record later?

Mr. **Moore**. Well, we will do that. We are really in the business of low enriched uranium and not highly enriched or certainly not plutonium.

Now whether the AVLIS technology is capable of producing plutonium or highly enriched uranium, I will let Bill answer.

Mr. **Young**. You can design it for that, but the process we have designed and will proof test, is only good for low enriched uranium. So it is not a proliferation hazard.

Senator **Ford**. All right. I thank both of you gentlemen, if you have anything—oh, excuse me, Senator Craig is back.

Senator **Craig**. Mr. Chairman, I slipped in on your backside.

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* The information can be found in the appendix.

Senator FORD. That is all right. My left side is the side I never watch. I am always watching the right.

[Laughter.]

Senator CRAIG. You see, coming over here, I was warned about you, Mr. Chairman.

Senator FORD. I do not know what they said, but half of it is true.

Senator CRAIG. Well, I will tell you about it later.

First of all, gentlemen, thank you very much for being before the committee.

Henson, in the energy strategy that you all have developed, and we will soon see in legislative form, the administration states that it supports legislation creating an Interim Government Enrichment Corporation.

Are you now crafting that into legislation? Will you be presenting legislation?

Mr. MOORE. We should have, Senator, we really did not. This legislation was already drawn up and our version would be a little bit different, but we know what the Senate is going to vote out, as it has the last three times.

We think it is perfectly proper for the enrichment legislation to be part of a comprehensive energy package this committee produces.

I think that is perfectly proper, and really, it probably should have been a part of the package we sent over.

Senator CRAIG. So what you are saying is you support the proposal that is to be produced. You are not crafting one yourself. I know there has been——

Mr. YOUNG. We have legislation that we sent over several times.

Senator CRAIG. But it is not included?

Mr. MOORE. No. It should have been.

Senator CRAIG. The reason I asked you that question, are there some who react to that absence as being a signal that you are not really that sincere and/or that dedicated to what you are mouthing? So you are saying you are sincere and you are dedicated and you are strongly supportive of?

Mr. MOORE. Absolutely, and we are being honest enough to say, we have no good reason as to why it was not part of the National Energy Strategy legislation. It should have been. I asked our draftsman, before I left to come over here, our General Counsel, why it was not in there?

It was just an oversight, the group that was working this interagency review were looking at the things that were options before the President, and this was one that long ago had been decided by the President as being—and the President before him, as being the proper policy.

And so it, just through that slip-up, did not get included in this package and it should have been.

Senator CRAIG. Okay. One other question, Mr. Chairman.

Bill, when you were before our committee a couple of days ago, I asked you a question as it related to the $49.539 million that is in your budget request for advanced reactor research and development, as to how that might be divided out.

At that time you told me, as I recall, that the division of that money in large part, well, in part, would come from the National Academy of Science study, you would be consulting that and a recommendation would be made.

That was a couple of days ago, and yet I understand this morning, before House Appropriations that you gave a break-out.

Mr. YOUNG. Sir, you mentioned the National Academy of Sciences study, and what I said was that the matter had been resolved in our budget. We had had an opportunity to consult with the people there and to get their opinions and we had gone ahead with our allocation.

We did not discuss numbers, which is what I got into this morning before the Appropriations Committee.

Senator CRAIG. And you did discuss numbers this morning?

Mr. YOUNG. Yes, I did, and I would be glad to discuss them now for you, if you wish.

Senator CRAIG. Would you break out for us now what those numbers are as it relates to high temperature gas versus liquid metal.

Mr. YOUNG. Of the total $49.5 million, $41 million would go towards the advanced liquid metal reactor and actinide recycle studies; $6 million would go to the high temperature gas reactor design and development; and $2.5 million would go to a program for nuclear engineering education.

The reason for that allocation is that first of all, the amount for the advanced liquid metal reactor is consistent with moving ahead in a cost effective way to demonstrate the technology, particularly the integral fast reactor technology which we are doing in Idaho, as you know.

With regard to the HTGR, there are two reasons why we decided to allocate at that level. The first reason is that during 1990, there was a look at the plant design and the potential for a demonstration project taken by the utilities and the industry.

They concluded from that look that they were not ready to proceed with the project, to try to commercialize that technology, in part because of its prospective economics.

We also found in the studies that we did with the National Energy Strategy, that the HTGR design needed some improvement to compete economically with other alternatives, and thus we are embarked upon an effort with the industry to redefine that design to be more economical.

And, therefore, the level of effort required is at a fairly low level to firm up the concepts that we would proceed with, establish licensing bases and so forth, before we put a very large amount of money into some particular features.

At the same time, the program is being conducted cost effectively through maximum cost-sharing, maximum common utilization of work on the New Production Reactor—HTGR.

In Fiscal Year 1992, the new production reactor, we estimate, will spend about $129 million on design and development activities that really are common between the NPR and the commercial HTGR. About 80 percent of our design is common.

Thus, our decision was that the $6 million combined with the $129 million, the total of $135 million, was a very cost effective and a reasonable sum to be spending on that technology, considering its status and the shared costs.

Senator CRAIG. I am trying to work my way through this, Bill, and understand it. I guess my concern is that, in that kind of an allocation of resource and the need for the demonstration projects and the problem that we deal with with classified information as it relates to NPR, and in that regard, not being able to meet the Nuclear Regulatory Commission's requirements, and you shake your head at that, and therefore, I would be interested.

But I begin to question if this is not the beginning of the sound of a death knell for high temperature gas.

Mr. MOORE. Not at all.

Mr. YOUNG. Not at all in my view.

Senator CRAIG. Then help me out with a better understanding of that.

Mr. YOUNG. Well, I think——

Senator CRAIG. When we talk about classified, and the ability to move that kind of information into the commercial arena.

Mr. YOUNG. Much of the HTGR design for the NPR is not classified. There are many aspects of it that are not classified. There are certain features that are classified.

Those features in the commercial reactor would be different. We have a common fuel system, but the NPR is designed to produce tritium and we would be designed to produce energy.

What would be presented to the NRC ultimately would be the commercial design.

Mr. MOORE. There is a body of thought, Senator, in this administration, that the HTGR may have more value to the civilian sector than the other kind of reactor that we might be considering for the new production reactor.

We are not unmindful of that. We are looking at that very carefully. I think the way this is going to be decided is right now in terms of the research being done, and on the new production reactor side, there has been no diminution of HTGR support.

The question there is going to be, the decision has to be made at some point now, as we have notified the Congress, we are going to build one, not two, because there is only need for one.

So the decision is going to be which of those one—which of those two rather—are we going to build and where are we going to build it? Those will be decisions that will be made down the line, if the Congress does not make it ahead of time for us. That will be made down the line from now.

And we have laid out, when it would be made. In the meantime, there has been no deemphasis of either of the technologies whatsoever.

Mr. YOUNG. And I would add to that, Senator, that one of the criteria in the NPR—HTGR, or I guess for both of them, is the extent to which it would benefit a commercial reactor. And we are looking very closely, with the NPR, as to how the commercial HTGR could build upon a demonstration through NPR.

Senator CRAIG. I appreciate that explanation. We obviously monitor those very closely. We see the value of both, and when I see that kind of a division of resource, I begin to want to understand the explanation behind the reasoning for it.

Mr. YOUNG. This is a case where a single office's budget does not tell the story necessarily.

Senator CRAIG. That is correct. Thank you.

I have no more questions Mr. Chairman.

Senator FORD. I think that clears us up. We will see what transpires. I appreciate you two gentlemen being here today, and we will keep driving on. We will get ours out and we will plow some more ground.

Mr. MOORE. Mr. Chairman, I think in a fitting closing statement, we would certainly say that we thank you and your colleagues on this committee for your unwavering support for moving this into a Government corporation.

I think this is the fourth Congress, if I understand it right, the history of this, that you have moved this legislation, and I think that you have certainly been unwavering in your support for the concept and we appreciate that.

Senator FORD. Well, it is getting bigger, the support is. I do not know whether I can carry that load or not. I like young people like you around to help us.

Thank you, Mr. Secretary and Mr. Young.

We now have Mr. William H. Timbers, Managing Director, Smith Barney, Harris Upham & Company. Welcome, Mr. Timbers.

Senator WALLOP. Mr. Chairman, while you are waiting for Mr. Timbers to seat himself, I would like to put into the record a statement regarding S. 210 from the EEI and ANEC.

Senator FORD. Without objections, the statement shall be included in the record.

We have also a statement from the National Taxpayers' Union that we will put in, and that will be included in the record.

[The prepared statements from the Edison Electric Institute and the American Nuclear Energy Council, and the National Taxpayers Union follow:]

PREPARED STATEMENT OF EDISON ELECTRIC INSTITUTE AND THE AMERICAN NUCLEAR ENERGY COUNCIL

This statement is submitted on behalf of the Edison Electric Institute (EEI) and the American Nuclear Energy Council (ANEC) as representatives of the domestic commercial customers of DOE's uranium enrichment enterprise (UEE). We appreciate this opportunity to submit our views on S. 210, the Uranium Enrichment Act of 1991, and we commend this subcommittee for its tireless efforts and leadership on this important issue.

EEI is the national association of investor-owned electric companies. Its members serve three-quarters of all ultimate electricity customers in the nation. ANEC represents over 100 domestic and international organizations having an interest in nuclear energy.

Through 1975, the UEE maintained a monopoly on supplying the western world with enrichment services. Today, the UEE retains only about 50 percent of the world market, and its decline is continuing unabated. Legislation to restructure the UEE is essential in order to reverse this decline.

DOE is continuing to lose more and more utility customers because of an inflexible management and pricing structure that is unable to respond to changing market conditions. DOE's commercial customers cannot solve the program's problems. They can only register their dissatisfaction with the program by canceling their contracts—which they are doing in growing numbers.

When the UEE's long-term contracts begin expiring in 1995, roughly 70 percent of the world's uncommitted demand for enrichment services will be from utilities in this country. At that time, the UEE will find itself—for the first time in its history—as just another supplier in a very competitive world market for long-term enrichment services. Clearly, in its present state, the enterprise is not prepared for that challenge.

Because the UEE is a branch of the federal government, only Congress can reform the program along more business-like lines so that it can compete effectively in the domestic and international marketplace. If Congress does not act—and act soon—the United States is in danger of losing a business that is vital to our national security, provides thousands of U.S. jobs, and brings in foreign revenues that help with our balance-of-trade situation.

The proposal contained in S. 210 to establish a government corporation to take over the UEE is not new. In 1984, a Tri-Committee Business Advisory Panel was established by Congress to review the operations of the UEE. The panel's most important recommendation, as stated by the chairman, Mr. William S. Lee, was that:

> Congress and the Secretary of Energy should take steps to establish a private business management structure for the enrichment enterprise. Alternative institutional structures under government ownership should be examined. The proper structure would further the business objectives of the enterprise and be compatible with an approach to privatization of enrichment services.

The Panel's recommendations are just as valid now as they were six years ago, if not more so. The recent Smith Barney analysis of the UEE reaffirms the urgent need to restructure this program, and the utility industry supports the recommendations of the Smith Barney study.

The Smith Barney report states that "the sale of the UEE to the private sector at this time would result in significantly less than optimal value to the Treasury." Based upon the UEE's current position, we believe that the establishment of a government corporation is a necessary first step to revitalizing the UEE.

S. 210 delegates the day-to-day management of the corporation to an administrator appointed by the President. A five-member corporate board—also appointed by the President—would serve in an advisory role. We urge the subcommittee to amend the bill to incorporate the Smith Barney recommendations on management structure.

The Smith Barney report recommends that the UEE establish chief executive officer and chief operating officer positions, with these officers responsible for the UEE's performance. A seven-member Board of Directors to which the CEO reports would serve as the chief policy-making and performance measurement group. We believe that implementation of the Smith Barney recommendations would provide greater assurance that the corporation will be able to respond competitively to market conditions.

S. 210 continues to reflect the $364 million "unrecovered government cost," based on a 1986 cash flow analysis. However, the Smith Barney report and an update of DOE's cash flow analysis clearly show that the utility industry has paid more than its share of the UEE's costs. According to a fiscal year 1990 cash flow analysis, the program's commercial customers have paid excess revenues of $648 million over the last 20 years. Furthermore, the Smith Barney report concludes that the commercial sector has overpaid the UEE by $1.17 billion, based on a fair and typical allocation of past UEE expenditures. We believe that S. 210 should be amended to reflect the fact that there are no "unrecovered government costs."

Different interpretations of Section 161v of the Atomic Energy Act, which is the pricing criteria for the UEE, lie at the heart of the debate over unrecovered costs. As required by Section 161v, the UEE's commercial customers have financed every dollar of the program's costs for providing enrichment services. In addition, the UEE's commercial customers paid more than $6 billion in excess revenues to the UEE in the 1970s and early 1980s that were used to expand capacity and support research and development activities. DOE never proposed, nor did Congress authorize, that those revenues be used to pay the Treasury for the initial investment in plants built for defense purposes.

Congress and DOE have made the decisions on how to spend excess revenues collected from commercial customers. Therefore, to suggest that this legislation is a bailout for the utility industry is ludicrous. Attempting to collect a mythical debt from the customers of the UEE amounts to taxing Americans, who are both taxpayers and ratepayers, twice for an asset they have already paid for and currently own.

Unfortunately, the unrecovered cost issue has been one of the major stumbling blocks to achieving meaningful reform in this program. The National Taxpayers Union (NTU) has been at the forefront of an ongoing, misdirected effort to confuse Congress by calling the program's assets a debt. This beguiling campaign has stalled this vital energy legislation and threatens the future viability of the UEE. Ironically, if the NTU is successful in stalling this proposal until the UEE is in shambles, future taxpayers will be left with the responsibility of paying an additional $300 million annually for defense enrichment needs and will have to absorb all of the enterprise's D&D costs, which could amount to billions of dollars.

Under S. 210, however, the UEE's commercial and defense customers will pay for D&D costs through enrichment prices. The bill deals with this important responsibility in an equitable manner. The bill's pricing criteria requires the Corporation to price its services to cover estimated D&D costs.

We are concerned about the provision in the bill requiring the Corporation to recover 50 percent of all D&D costs by the year 2000. Because of the uncertainties surrounding the actual cost of D&D activities, attempts to collect half of the costs in less than ten years may impose an unrealistic and artificial burden on the corporation's pricing flexibility. We recommend that the time period be extended to the year 2010, when D&D activities are likely to commence.

For those who are skeptical that collection of D&D revenues through enrichment prices will raise sufficient funds, we would point out that since 1986 the UEE has generated at least $1 billion in excess cash over expenditures from commercial customers. We believe that raising D&D funds through SWU prices will be an effective and equitable means for commercial customers to pay their fair share.

During last year's consideration of the budget reconciliation legislation, the Senate proposed imposing a 0.2 mil/kwh fee on electricity generated by nuclear power to raise money for D&D costs in order to satisfy the Congressional Budget Office's requirements for budget savings. While we recognize the unique circumstances created by the budget reconciliation process, the utility industry is strongly opposed to the imposition of millage fees on operators of nuclear energy plants as a method of paying for any liabilities of the UEE. Such a fee unfairly impacts only domestic commercial customers and does not tax foreign customers as well.

S. 210 establishes a revolving fund into which the money collected from both defense and commercial customers for D&D costs will be deposited. The bill also equitably allocates D&D costs based upon historical use of the enrichment facilities.

The bill requires the UEE's customers to continue to bear the risks and costs of new technology investment and development. Nearly a billion dollars toward the development of the Atomic Vapor Laser Isotope Separation (AVLIS) technology have already been spent, all of it from revenues that the UEE has collected from customers over the years. No taxpayer dollars have been spent.

Under a restructured corporation, the decision to deploy AVLIS should be made in the same manner such economic decisions are made by any business: the corporation will go forward with AVLIS if the technology proves to be feasible and if the Board determines that AVLIS will be a profitable option. We believe that this should be the sole criteria used in deciding whether to deploy AVLIS.

The domestic utility industry would prefer to purchase uranium enrichment services from a domestic supplier under predictable and competitive terms. However, utilities have an obligation to their ratepayers and rate regulating bodies to keep their costs as low as possible. If the UEE is not operated on a more efficient and competitive basis, utilities will be forced to seek other reliable suppliers.

We are confident that without restructuring of the UEE, additional lower cost enrichment capacity will be available to absorb those customers leaving DOE in the next ten years as their commitments expire. DOE's foreign competitors are closely watching to see what happens to the UEE in the next several years. The administration and Congress can either effectively restructure this program or take no action and allow the program to continue its decline.

Inaction by Congress will ensure that there will be additional unmet demand in the U.S. market—a demand that DOE's competitors will be eager to meet. Illustrating this reality is the proposed enrichment venture in Louisiana. This venture could construct a completely new and independent enrichment plant within the United States using European centrifuge technology. In addition, a growing number of foreign suppliers have emerged as very competitive suppliers of enrichment services in the U.S. domestic market.

The result of no action by Congress will be damaging to the national economy: loss of dividends to the Treasury, loss of more than 5,500 U.S. jobs, a worsening of our balance-of-trade position, and an increase in the cost to taxpayers of enrichment for national defense purposes and for unfunded liabilities such as decontamination and decommissioning. The United States also would lose a domestic capability that is important to its energy security. Furthermore, the United States will not be a significant player in non-proliferation efforts because of eroding enrichment capabilities.

With effective and prompt restructuring, this scenario does not need to become a reality. If restructuring legislation is enacted, we strongly believe that the UEE can continue to be a national asset that helps to ensure our national security, creates jobs, and provides a return to the U.S. Treasury. We urge this subcommittee to continue to press vigorously for enactment of this vital energy legislation.

NATIONAL TAXPAYERS UNION,
Washington, DC, March 6, 1991.

Hon. WENDELL FORD,
Chairman, Energy Research and Development Subcommittee, Senate Energy and Natural Resources Committee, Washington, DC.

DEAR SENATOR FORD: It is unfortunate that we were denied our request to present oral testimony at your upcoming hearing on S. 210, relating to the Department of Energy's (DOE) civilian uranium enrichment program. We were told inasmuch as this was the same bill which the Committee approved last Congress, the Committee felt it unnecessary to hear from outside witnesses.

This bill has actually passed the Senate twice. That is precisely the reason why outside witnesses should be heard. The legislation has been in a gridlock. There is intense opposition to this bill and nothing has changed to suggest that the prospects are any brighter this year.

Instead of shutting out witnesses, your subcommittee should welcome them. We are not opposed to many of the concepts in your bill. We are willing to work with you and your staff to suggest changes which will both protect taxpayers and put the enrichment industry on a sound footing.

Our concerns include:

1. Unrecovered costs: Under current law (section 161v. of the Atomic Energy Act), DOE is required to recover all the costs associated with the civilian uranium enrichment program. According to Office of Management and Budget (OMB) and General Accounting Office (GAO) calculations, DOE has failed to recover more than $10 billion in costs.

In fact, in 1986 DOE announced in the *Federal Register,* that they were writing off $4,065 million but were still committed to paying $3,457 of the remaining past costs. Now, this legislation writes-off even that amount. It is outrageous that the enterprise be allowed arbitrarily to make such an accounting change: because the enterprise is unable to pay its past costs, they are reclassified, written off and charged to the taxpayers.

Further, S. 210 repeals the full cost recovery requirement, thus eliminating the sole statutory taxpayer protection and blessing unlimited future subsidization by U.S. taxpayers.

2. Environmental liabilities: The Smith-Barney consulting firm, has indicated that DOE's civilian program has accumulated billions of dollars in liabilities for environmental remedial action and decommissioning costs. (We have been told privately that the amount likely exceeds $10 billion). To date, none of this has been funded.

S. 210 purports to set up a fund to pay for these liabilities, but freezes in place the DOE's uranium enrichment contract with nuclear electric utilities. These contracts set prices so low that the costs of environmental remediation can never be paid by receipts from DOE customers. Consequently, this enormous liability will fall on the U.S. taxpayers.

3. $300 million subsidy to uranium mining industry: The bill, like an industry Christmas tree, calls for at least $330 million in taxpayer subsidies for foreign and domestic uranium companies to clean-up their uranium mill tailings. There is no reason nor obligation for U.S. taxpayers to incur this liability. In fact, under the Uranium Mill Tailings Radiation Control Act, the legal and financial responsibility for cleaning up these sites rests solely on the private uranium mining companies.

4. Additional $2.5 billion in borrowing authority: The bill also provides for $2.5 billion in borrowing authority so the "re-organized" government agency can invest in new uranium enrichment capacity. Authorizing multi-billion dollar borrowing by a government entity to build additional unnecessary capacity is a recipe for further disaster. We remind the Subcommittee that DOE and its predecessor wasted billions in taxpayer funds and assets on the unneeded gas centrifuge enrichment plant (GCEP) at Portsmouth, Ohio. Why is the Subcommittee even entertaining a repeat?

Proponents of the S. 210 bailout claim that there has been such a long delay that there is no alternative. It does not have to be this way. Congress could and should charge nuclear utilities with the cost of cleaning up the DOE uranium enrichment mess just as Congress can and has charged nuclear utilities for the cost of disposing of spent nuclear fuel under the Nuclear Waste Fund. There is no reason that taxpayers should be required to subsidize the ill-managed DOE uranium enrichment program.

Unfortunately, S. 210 is the same bill as in the past. It continues to be a bad multi-billion dollar bailout bill. The National Taxpayers Union continues to oppose it. Yet, we reiterate our desire to work with you and the Committee to create legislation that will not only protect the taxpayer but establish a healthy uranium enrichment program.

Sincerely,

JILL LANCELOT,
Director, Congressional Affairs.

PREPARED STATEMENT OF JILL LANCELOT, DIRECTOR, CONGRESSIONAL AFFAIRS, NATIONAL TAXPAYERS UNION

Mr. Chairman, although it is unfortunate that we were not able to present this testimony orally before the Committee, we appreciate the opportunity to provide testimony for the record.

We are not opposed to many of the concepts in S. 210 and, in fact, we hope that we can work with you to suggest meaningful changes that will both enhance the program and protect the U.S. taxpayers.

However, Mr. Chairman, with all due respect, this bill reminds me of the old bait and switch trick.

There is much at the beginning of the bill—the so-called 'findings' section—with which the National Taxpayers Union would agree.

We strongly agree that "A competitive, well-managed and efficient enrichment enterprise" would provide important economic benefits to the United States and contribute favorably to the foreign trade balance of payments.

We strongly agree that "The operation of uranium enrichment facilities must meet high standards for environmental health and safety."

And, most importantly, we strongly agree that the enrichment enterprise customers "rather than the taxpayers at large should bear the costs of commercial uranium services."

In fact, that is precisely the law now. Since the government began providing enrichment services to commercial nuclear utilities, it has been required, under Section 161v. of the Atomic Energy Act, to fully recover all costs associated with the enrichment program. However, based on the testimony of the General Accounting Office (GAO) and the Department of Energy (DOE), the government's effort to recover costs has been a monumental failure. According to testimony by the General Accounting Office, at the end of fiscal year 1988 DOE had not recovered about $9.6 billion from it customers for past costs. Each year about another $1 billion is added.

Taxpayers should not be left holding the bag for these costs. Unfortunately, this legislation will compound the problem.

In fact, this bill will have precisely the opposite effect of its stated finding that the taxpayers should not bear the costs of providing commercial enrichment services.

Put simply, the bill says one thing, but the bill's actual effect will be very different. That's the old bait and switch ruse. Here are some specific inconsistencies:

> Inconsistency number one: the bill establishes the Department of Energy's unrecovered costs at $364 million. If the GAO is to be believed, that will leave the U.S. taxpayers picking up the tab for are than $11 billion in costs which should have accrued to DOE's customers.
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> Inconsistency number two: the bill repeals Section 161v. of the Atomic Energy Act, the statutory provision requiring full recovery of all costs by the DOE. This is the taxpayers' first and only line of defense in the law. Yet, this bill proposes its repeal.
>
> Inconsistency number three: the bill authorizes the corporation, which it establishes, to borrow $2.5 billion, presumably to finance new construction of an unneeded new enrichment plant (AVLIS) using unproven technology to serve a stagnant market. However, if the new investment goes bad, for which there is ample precedent, then there is no way to protect the taxpayer from having to foot the bill.
>
> Inconsistency number four: the bill authorizes $300 million to subsidize the clean-up of uranium and thorium mill tailings. Under current law, the Uranium Mill Tailings Radiation Control Act, this clean-up is the exclusive responsibility of the private uranium industry.
>
> Inconsistency number five: the bill ratifies uranium contracts having guaranteed ceiling prices so low that profit maximization and cost recovery are effec-

tively prevented. According to GAO, the ceiling price is illegal under current law.

There are other important examples of how the bill falls short of its stated goals. For instance, an important objective of the legislation is the establishment of a "competitive, well-managed and efficient enrichment enterprise" which is able to respond to the demand of "market forces". Yet, the corporation is not clearly directed to maximize returns, nor is it given tools to be efficient.

And, with regard to protection of the public health and the environment, the bill contemplates an ambitious decontamination and decommissioning program. Yet, there is no mechanism to provide for the enormous amount of money to pay for an environmentally sound cleanup.

Finally, with regard to the composition of the Board of Directors, the day-to-day oversight mechanism for the corporation. If "customers" and not the taxpayer are to bear the costs for this program, mandating the appointment of a representative of the utility industry (the corporation's major customer) to the board will create a massive conflict of interest.

There is no doubt that the problem facing the enrichment enterprise are complex. The program has had to confront the effects of monumental management errors by the Department of Energy as well as increasingly intense competition from abroad. We think it is a good idea to separate the program from the government, consistent with national security and non-proliferation concerns. True discipline from the marketplace will lead to prudent management. Unfortunately, this bill falls short.

Soothing words about minimizing costs to the taxpayer, however, are just so much window dressing. Plain and simple, it is false advertising. Either that language should be removed or the bill should be rewritten so that it will live up to this fundamental goal. We intensely support that goal, and we are ready to work with the committee to identify the means to achieve it.

Thank you.

Senator FORD. Mr. Timbers, we are delighted to see you.

STATEMENT OF WILLIAM H. TIMBERS, JR., MANAGING DIRECTOR, SMITH BARNEY, HARRIS UPHAM & CO., INC.

Mr. TIMBERS. Thank you, Mr. Chairman.

It is a pleasure to be back here again. I do have a prepared statement that for the purposes of this testimony, I would like to give you a summary of that and perhaps salient excerpts from it.

Senator FORD. That will be fine.

Mr. TIMBERS. Mr. Chairman and members of the committee, as you are aware, that last year Smith Barney conducted for the Department of Energy an in-depth, independent financial assessment of the Uranium Enrichment Enterprise.

In that report and in testimony before this committee last June, Smith Barney strongly recommended that a new Government corporation be created that would enable the United States uranium enrichment activities to be operated in a more business-like fashion.

Today, Smith Barney still stands behind this recommendation, and supports the proposed restructuring in S. 210, which in our view will result in greater operational efficiency and financial flexibility for this Nation's uranium enrichment activities.

Mr. Chairman, as you indicated in the beginning, that there are several challenges facing the UEE. You indicated, and we certainly agree, that the market shares decreased significantly over the last 20 years.

There is intense competition in the marketplace that is due to significant existing inventories and excess of enrichment capacity. There is a significant low cost spot market for enriched uranium which has begun to develop.

Another challenge, as you clearly indicated, was that there is a very significant current in future environmental clean-up costs that need to be addressed, as well as the ultimate decommissioning and decontamination costs.

Now it is with those challenges that we all have identified over the years, is that these challenges, together with the evaluation that we provided to the Department of Energy and to this committee last year, Smith Barney still believes that the best way to maximize the value of these enrichment operations to the treasury and to achieve other goals is to establish a true business enterprise in the private sector.

Fundamentally, a private enterprise entity would be the most viable form of business that could compete effectively in the global market. However, we believe that such an immediate transfer would be impractical due to a number of reasons.

Furthermore, because of these factors, the sale of the UEE to the private sector at this time would result in significantly less than optimal value to the treasury.

It is as a result of this that Smith Barney recommends to this committee, as a first step, the transfer of the UEE to a newly created Government corporation similar to the one outlined in S. 210.

We believe it is critical to establish this proposed Government corporation in a manner that will permit it to operate in a business-like fashion. This necessitates the Government corporation, to the maximum extent possible, operate outside the political and bureaucratic environment that historically affected the business operations of the UEE.

This can be accomplished by forming a new Government corporation with an organizational structure and corporate attributes as close as possible as those to the private corporation.

In addition, it is imperative that the corporation be free of those administrative and financial controls that constrain the operational efficiency and the financial flexibility of a Government agency.

Mr. Chairman, what does this get for you? What does this get for the United States Government and what does this get for the U.S. taxpayers?

Let me cite seven reasons that I think are critical and important to this consideration. First of all, it will maximize the economic value to the treasury and to the U.S. taxpayer through both annual dividends and proceeds of a future sale to the private sector.

Two, provide a reliable and competitively priced supply of enriched uranium. Three, establish prices for its commercial products, materials and services as it deems appropriate in order to maximize profitability. Four, to operate for a reasonable period of time during which the barriers to privatization can be analyzed and where possible, removed.

Five, establish a history of successful operating and financial performance, i.e., a track record that will motivate private interests to pay the highest possible price in the event of ultimate privatization of the UEE.

Six, to determine capital funding decisions based on economic considerations rather than the political factors that have influenced capital spending decisions in the past; and seven, conduct its affair in a less politicized environment, so it can be managed in an efficient and business-like fashion.

There are several additional key points to bring up here, Mr. Chairman. From our analysis, it is clear the UEE has substantial preexisting liabilities relating to environmental clean-up and ongoing compliance and decommissioning and decontamination.

Furthermore, there are additional preexisting liabilities arising from the Tennessee Valley Authority contract settlement costs. These obligations arise from prior enrichment obligations, and in our view, are sunk costs.

These sunk costs will exist whether the UEE is shut down, restructured within the DOE or transferred to a new private oriented entity outside the Government. Estimates for these various costs range in the billions of dollars, and in many cases are not currently subject to quantification.

Efforts to directly recover all or a significant portion of these sunk costs from UEE's revenues, together with a proposed pay back of unrecovered costs are misdirected and ill-conceived in the context of the historical objectives and future business requirements.

A requirement to recover these costs will merely serve to create a debt burden and contingent liabilities that will make ongoing enrichment operations infeasible, whether under the current structure or restructured either within or outside the Government. Most importantly, these preexisting sunk costs should remain with the Government.

Furthermore, to the UEE's credit, in an increasing competitive world market, where product price has become the dominant criterion for nuclear utilities purchasing enriched uranium, the UEE has maintained operating profitability.

However, this current and near-term profitability is based on long-term contract prices that cannot be sustained when lower priced short-term purchases begin to dominate the market.

Finally, it is important to note that the implementation of these restructuring recommendations will not necessarily result in near-term magic transformation of the UEE into a dynamic business enterprise; but rather, it is the best way, in my opinion, to provide for the necessary operating efficiencies and financial flexibility to compete in a highly competitive world market. It is the best way to maximize the value of this enterprise to the treasury and to the taxpayers. What happens if this legislation is not passed? What happens if nothing is done? It will take some to implement these changes and to realize the benefits of the restructuring. However, if the United States is to be competitive in the mid-1990's, now is the time to effect these changes.

Failure to act now will be a clear signal to both competitors and customers that the United States does not intend to be a long-term player in this business. Customers will decide that they can no longer rely on the UEE to meet their requirements, and they will continue to cancel their contracts. The U.S. will lose market share rapidly, as competitors jump in to serve UEE's former customers.

Mr. Chairman, members of the committee, this may be a grim picture, but the worst part is the U.S. taxpayer will be the real loser. With diminished revenues, if any, and with little opportunity to finally sell this enterprise to the private sector, the taxpayer will still have to foot the bill for the environmental and D&D's sunk costs.

Also, there will be no commercial revenues to help defray the cost of our military enrichment services. Consequently, we believe that the taxpayer will be better served if the UEE is transferred to a new Government corporation.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Timbers follows:]

PREPARED STATEMENT OF WILLIAM H. TIMBERS, JR., MANAGING DIRECTOR, SMITH BARNEY, HARRIS UPHAM & CO., INC.

Mr. Chairman and Members of the Committee: I appreciate the opportunity to appear before you today to present the testimony of Smith Barney concerning the Department of Energy's Uranium Enrichment Enterprise (or the "UEE" as I will refer to it) and your consideration of S. 210. As you are aware, last year Smith Barney conducted for the Department of Energy an in-depth, independent financial assessment of the UEE. In that report, and in testimony before this Committee last June, Smith Barney strongly recommended that a new government corporation be created that would enable the United States' uranium enrichment activities to be operated in a more business-like fashion. Today, Smith Barney still stands by this recommendation and supports the proposed restructuring in S. 210 which, in our view, will result in greater operational efficiency and financial flexibility for this nation's uranium enrichment activities.

The UEE continues to face considerable challenges, both today and in the future. Competition in this world-wide market has become particularly intense. In less than twenty years, the UEE has gone from a position of near global monopoly in supplying enriched uranium to the non-communist world to a current market share of approximately 45 percent.

Intense competition in the marketplace will continue. This is due to significant existing inventories and excess enrichment capacity, with very little increase expected in world demand through the end of the century and beyond. Utilities that purchase the UEE's enriched uranium have begun to notify the DOE that they intend to terminate their long-term contracts. The trend toward long-term contract terminations is expected to grow.

A significant low-cost spot market for enriched uranium has begun to develop, which utilities believe to be both broad and reliable. This movement toward a short-term market has been accelerated by the sale of low-cost inventories by foreign suppliers. The depth of existing spot supply and unused production capacity have caused a growing number of utility customers of the UEE to conclude that there is little risk of a supply failure. Therefore, they view spot market purchases at reduced prices as not only reliable but also cost-effective and prudent. As this market develops further, it will put additional pressure on both the UEE's market share and revenues.

Furthermore, the UEE is responsible for very significant current and future environmental clean-up costs that are associated with continuing operations, as well as the costs associated with the ultimate decommissioning and decontamination requirements for the UEE's enrichment facilities.

In light of these challenges, among others, together with our evaluation of the uranium enrichment market, Smith Barney believes that the best way to maximize the value of enrichment operations to the Treasury, and to achieve other goals, is to establish a true business enterprise in the private sector. Fundamentally, a private entity would be the most viable form of business that could compete effectively in the global market. However, we believe that such an immediate transfer would be impractical due to, among other reasons, the UEE's current organizational structure, unknown contingent liabilities, the absence of clear regulatory requirements for existing and new technology, lack of a commercial track record and uncertainties associated with the evolving short-term/spot market for enriched uranium purchases. Furthermore, because of these factors, the sale of the UEE to the private sector at this time would result in significantly less than optimal value to the Treasury.

As a result, Smith Barney recommends to this Committee, as a first step, the transfer of the UEE to a newly-created government corporation similar to the one outlined in S. 210. We believe it is critical to establish this proposed government corporation in a manner that will permit it to operate in a business-like fashion. This necessitates that the government corporation, to the maximum extent possible, operate outside the political and bureaucratic environment that has historically affected the business operations of the UEE. This can best be accomplished by forming the new government corporation with an organizational structure and other corporate attributes as close as possible to those of a private corporation. In addition, it is imperative that the corporation be free of those administrative and financial controls that constrain the operational efficiency and financial flexibility of a government agency.

By restructuring the UEE as a government corporation, as envisioned by S. 210's establishment of the United States Enrichment Corporation, Smith Barney believes that the new corporation would be able to:

Maximize the economic value to the Treasury and to the U.S. taxpayer through both annual dividends and the proceeds of a future sale to the private sector;

Provide a reliable, competitively priced supply of enriched uranium;

Establish prices for its commercial products, materials and services as it deems appropriate in order to maximize its profitability;

Operate for a reasonable period of time during which the barriers to privatization can be analyzed and, where possible, removed;

Establish a history of successful operating and financial performance, i.e., a track record, that will motivate private interests to pay the highest possible price in the event of the ultimate privatization of the UEE;

Determine capital funding decisions based on economic considerations rather than the political factors that have influenced capital spending decisions in the past; and

Conduct its affairs in a less politicized environment, so it can be managed in an efficient, business-like fashion.

We believe that S. 210 is a generally appropriate vehicle to provide the necessary flexibility so the UEE can conduct its operations in a business-like manner. However, we find two fundamental areas of concern which may constrain the success of the UEE under S. 210. First, the proposed borrowing capacity of $2.5 billion may not be sufficient to finance the UEE's ongoing and regular capital needs together with the costs of AVLIS development and implementation. Furthermore, the express disallowance of United States guarantees on the indebtedness of the Corporation may be unrealistic for what in many ways, amounts to a start-up entity. In our Report last year we suggested the development of a thorough capital market access strategy which, as a failsafe, has as a part of the strategy, the ability to access the Treasury. This access could be in the form of either a right to borrow or as a right to receive a guarantee up to a certain limit.

Second, regarding the D&D funding provision, we believe that, as a first step in dealing with D&D costs, there should be a thorough study, by independent experts, of the appropriate methodologies, costs and respective responsibilities for D&D. Thus, it is premature to legislate the level and structure of a D&D fund and, also, premature to allocate liability between Government and commercial customers. At the very least, there should be a provision in the bill that permits the Board of the Corporation to adjust the funding level for D&D, after the study is completed.

From our analysis, it is clear that the UEE has substantial pre-existing liabilities relating to environmental cleanup and ongoing compliance and decommissioning and decontamination. Furthermore, there are additional pre-existing liabilities arising from the Tennessee Valley Authority contract settlement costs. These obligations arise from prior enrichment operations and are "sunk costs" that will exist whether the UEE is shut down, restructured within the DOE, or transferred to a new profit-oriented entity outside of the Government. Estimates for these various costs range in the billions of dollars and, in many cases, are not currently subject to quantification.

Efforts to directly recover all or a significant portion of these "sunk costs" from the UEE's revenues, together with a proposed payback of "unrecovered government costs", are misdirected and ill-conceived in the context of historical objectives and future business requirements. A requirement to recover these costs would merely serve to create a debt burden and contingent liabilities that will make ongoing enrichment operations infeasible, whether under their current structure or restructured either within or outside the Government. These pre-existing "sunk costs" should remain with the Government.

Furthermore, and to the UEE's credit, in an increasingly competitive world market, where product price has become the dominant criterion for nuclear utilities purchasing enriched uranium, the UEE has maintained operating profitability.

However, this current and near-term profitability is based on long-term contract prices that cannot be sustained when lower-priced, short-term purchases begin to dominate the market.

Finally, it is important to note that the implementation of these restructuring recommendations will not necessarily result in a near-term magic transformation of the UEE into a dynamic business enterprise. But rather, it is the best way, in my opinion, to provide for the necessary operating efficiencies and financial flexibility to compete in a highly competitive world market. It is the best way to maximize the value of this enterprise to the Treasury and to the taxpayers.

It will take some time to implement these changes and to realize the benefits of restructuring. However, if the United States is to be competitive in the mid-1990's, now is the time to effect these changes. Failure to act now will be a clear signal to both competitors and customers that the United States does not intend to be a long term player in this business. Customers will decide that they can no longer rely on the UEE to meet their requirements, and they will continue to cancel their contracts. The U.S. will lose market share rapidly as competitors jump in to serve the UEE's former customers.

This may be a grim picture, but the worst part is that the U.S. taxpayer will be the real loser. With diminished revenues, if any, and with little opportunity to finally sell this enterprise to the private sector, the taxpayer will still have to foot the bill for the environmental and D&D sunk costs. Also, there will be no commercial revenues to help defray the cost of our military enrichment services.

Consequently we believe that the taxpayer will be better served if the UEE is transferred to a new government corporation.

Thank you, Mr. Chairman.

MANAGING DIRECTOR
[illegible]

SMITH BARNEY

June 15, 1990

Mr. Philip G. Sewell
Deputy Assistant Secretary
for Uranium Enrichment
Office of Nuclear Energy
U.S. Department of Energy
Washington, DC 20545

Re: Supplemental Analysis of Unrecovered Costs - as Evaluated in Smith Barney's Independent Financial Assessment of the Department of Energy's Uranium Enrichment Enterprise, dated May 15, 1990

Dear Mr. Sewell:

In our above referenced Report, Smith Barney and its Project Team undertook a detailed analysis of the components of unrecovered costs. This analysis categorized the treatment of major expenditures in dispute into three general areas:

- Oversights & Errors
- Judgments
- Policy Issues

Utilizing the independent expertise of Coopers & Lybrand, the full range of costs involved in the debate on unrecovered costs were reviewed. For the first two categories of Oversights & Errors and Judgments, Smith Barney and the Project Team developed its own estimate of unrecovered costs as found in our Report.

Additionally, Smith Barney requested Coopers & Lybrand to calculate the full amount of the United States Government investment in the Department of Energy's Uranium Enrichment Enterprise, including the third category of Policy Issues, as of September 30, 1989. Their supplemental report is attached hereto.

In reliance upon the Coopers & Lybrand analysis, Smith Barney and the Project Team believe that there is no unrecovered cost and, in fact, there has been an over-recovery of $1.170 billion.

While there has been considerable debate over this issue and the appropriate accounting methodology to determine the amount of these costs, the Project Team has reviewed the supplemental report of Coopers & Lybrand and concurs with both its methodologies and findings. Furthermore, this supplemental report should be read and evaluated in the context of our referenced Report of May 15, 1990.

Sincerely,

William H. Timbers, Jr.

Enclosure

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June 8, 1990

Mr. William H. Timbers, Jr.
Managing Director
Smith Barney, Harris Upham & Co. Inc.
1345 Avenue of the Americas - 50th Floor
New York, New York 10105

Dear Mr. Timbers:

As you requested, we have calculated the amount of the United States Government investment in the Department of Energy's Uranium Enrichment Enterprise as at September 30, 1989, based on the following assumptions:

a. The balance of unrecovered costs at September 30, 1989 from both commercial and government customers, before policy issues relating to plant abandonment and excess capacity, is $4,525 million.

b. The total costs of plant abandonment and excess capacity at September 30, 1989, including imputed interest, were $11,389 million.

c. The costs of policy issues should be allocated on the basis of a 50/50 split between equity holders and customers.

Our findings are set forth in the accompanying report. The procedures were performed solely to assist Smith Barney in its independent financial assessment of the UEE for the Department of Energy.

We believe you understand that the scope of our procedures, as described above, was intended to provide information to assist you in your independent assessment and did not constitute an examination in accordance with professional standards; accordingly, we are unable to express and do not express an opinion on any of the data included in the accompanying report, which also sets forth our comments and findings. Had we performed additional procedures or had we conducted an examination of the data in accordance with professional standards, other matters might have come to our attention that would have been reported to you. Accordingly, we take no responsibility for the sufficiency of the procedures for your purposes.

This report is intended solely for the information and use of Smith Barney and for filing with the Department of Energy and should not be used for any other purposes.

Very truly yours,

Coopers & Lybrand

Unrecovered Costs - Treatment of Policy Issues Relating to Excess Capacity and Abandoned Plant

As indicated in our report dated May 10, 1990, we are not aware of any clear, generally accepted methodology to allocate the responsibility for and costs of policy issues relating to excess capacity and abandoned plant. However, the Federal Energy Regulatory Commission ("FERC"), which is the only U.S. government entity that consistently has to deal with issues such as abandoned plant, has determined that equitable resolution of such issues is a 50/50 split (50% to equity holders, and 50% to customers) of all prudently incurred costs. This is the policy which applies to the UEE's domestic civilian customers for their own FERC-regulated operations.

(Dollars In Millions)

	Principal	Imputed Interest	Total
Excess capacity	$1,200	$1,649	$ 2,849
GCEP abandonment	2,934	2,321	5,255
TVA demand charges	2,618	667	3,285
Total	$6,752	$4,637	$11,389

The DOE has excluded $4,134 million from its calculation of unrecovered costs, being the principal amounts for excess capacity and for GCEP.

The interest on GCEP and excess capacity write-offs represents the imputed interest on those amounts, of which $2,265 millions is reflected in the UEE's cumulative deficit and $1,605 million is not. The TVA demand charges are for capacity costs paid for unused and unrequired firm power commitments.

In addition to the above costs, the UEE will incur an additional $951 million of TVA demand charges for the years 1990 to 1994.

If the policy of a 50/50 split were applied to the UEE, its share of the above costs at September 30, 1989 would be $5,695 million. This amount would be deducted from the recalculated unrecovered cost balance before policy issues of $4,525 million at September 30, 1989 (as shown in our report dated May 10, 1990). The restated balance of unrecovered cost at September 30, 1989 using the policy of a 50/50 split of costs is as follows:

	(Dollars In Millions)
As shown in Coopers & Lybrand's report of May 10, 1990	$ 4,525
Less: 50% of total policy costs	(5,695)
Net overrecovery at September 30, 1989	$(1,170)

This approach might be appropriate in this situation, and might resolve this issue in a manner that is equitable to the DOE and to its customers. The alternatives are to require full recovery, no recovery or determine some other basis for recovery which is more equitable.

A prudence evaluation has not been conducted and we would propose, in the absence of such an evaluation, to treat abandoned plant, total costs of excess capacity and TVA demand charges as prudently incurred.

S.341

THE NATIONAL ENERGY SECURITY ACT OF 1991

TITLE XII--ADVANCED NUCLEAR REACTOR COMMERCIALIZATION

SUMMARY

Purpose.--The purpose of title XII is to refocus and restructure the nuclear energy programs of the Department of Energy in a way that encourages the commercialization of advanced nuclear reactor technologies.

Selection of Nuclear Technologies.--Title XII requires the Secretary of Energy to undertake a decision process, with full public input, to select nuclear technologies to be supported for commercialization. Criteria to be considered in the selection process would include cost-effectiveness in comparison with alternative sources of electricity; ability to utilize modular construction techniques; adaptability to standardized design, construction, and licensing; use of passive safety features; and presence of features to discourage nuclear proliferation. The Secretary would solicit proposals from the private sector for two kinds of projects under this title.

Demonstration of Institutional Arrangements.--The first type of project would be for purposes of demonstrating improved siting, licensing, and financial arrangements and would be intended for near-term commercialization of advanced technologies. The purpose of federal involvement would be to lend support to the project in developing innovative private financing and in testing a more streamlined licensing process. No federal funds would be expended to finance this project unless new regulatory requirements were imposed after issuance of a construction license.

Commercial-Scale Demonstration of Advanced Technology.--The second type of project would be built for purposes of demonstrating commercial-scale construction, licensing, and operation of an advanced reactor and would be intended for technologies that are further away from commercialization. Federal funds would be available to support this project, but at least 50 percent of the total estimated cost would have to be provided by the private sector. Responsibility for any cost overruns would have to be assumed by the private sector.

Licensing by the Nuclear Regulatory Commission.-- Any facility that is selected for either project under this title would be licensed by the Nuclear Regulatory Commission (NRC). Title XII expressly reaffirms the NRC's authority to issue combined construction and operating licenses for projects built under the title. A public hearing is required prior to issuance of the combined license and an opportunity for a second hearing prior to operation is afforded, though the opportunity is limited. A second hearing prior to operation would be provided, though, if the NRC determined that it was necessary to ensure safe operation of the facility.

S.341
THE NATIONAL ENERGY SECURITY ACT OF 1991
TITLE XIII--NUCLEAR REACTOR LICENSING

Purpose of Title XIII

The purpose of title XIII is to remove a major impediment to the construction of new nuclear power plants--the fact that after a plant is built it may not be allowed to operate for months or years while the Nuclear Regulatory Commission (NRC) holds a second hearing on issues that have already been addressed during the earlier proceeding on the combined license. At the same time, the legislation preserves the NRC's authority to hold a hearing if necessary to determine if the plant has been built properly. The legislation meets these two goals by defining more narrowly both the scope of issues that can be raised in a hearing after the plant is built and the circumstances in which plant operation would be delayed until after the hearing is completed.

Summary of Title XIII

Title XIII amends section 189 of the Atomic Energy Act to make it clear that the NRC has the authority to focus the post-construction, pre-operational hearing on issues of non-compliance with the combined license. The legislation would provide for a pre-operational hearing if an issued raised could materially and adversely affect the safe operation of the facility. Importantly, however, the legislation would also permit the NRC to allow the plant to begin operating before the hearing unless the NRC determines that the hearing is needed to resolve a previously unreviewed compliance question that poses a serious threat to the safe operation of the plant.

Senator **Ford**. Thank you very much, Mr. Timbers. We appreciate your testimony. I only have two or three questions I would like to ask.

Can you just briefly for the record kind of single out and tell us, have there been any changes since Smith Barney wrote its report last year?

Mr. **Timbers**. In terms of our assessment of the enterprise?

Senator **Ford**. Yes. And the reason to sell, just to kind of put it in a little capsule for us.

Mr. **Timbers**. Well, our observation has been general in the last 6 months as opposed to a detail study, but there have been additional contract cancellations, as we had expected there to be. As a result, revenues have gone down for the UEE.

At the same time, the Department of Energy has embarked upon a process in terms of trying to reduce the cost of operations of the UEE.

Also, subsequent to the testimony that we provided to this committee last June, the Clean Air Act was passed by Congress. Our analysis of that Clean Air Act is a little different than the Department's is, but in essence, that the cost of operations have gone up significantly, will go up significant when phase 2 of the Clean Air Act is implemented in 1996, 1997.

In essence, that we see that the costs will rise for approximately $24 per SWU, as opposed to the Department of Energy's estimate of $21, and we see that the average cost to production will be approximately $94 per SWU. That provides a very small margin of profitability for this enterprise.

Those are pretty much the fundamental changes that have occurred since the testimony that we provided last June.

Senator **Ford**. OMB and some Republicans in the House have criticized the S. 210 for not forcing a sale of the enterprise to the private sector by a date certain. Is that workable? Do you have a comment about that?

Mr. **Timbers**. If you had a date certain upon which you were to specify today in the future that this enterprise were to be sold, it is like shooting craps. If the enterprise is in a position to be profitable at that time, great, a good decision was made and that the U.S. taxpayer will realize great benefits in the proceeds of that sale.

However, Mr. Chairman, today I cannot tell you whether this enterprise will be prepared to enter into the private marketplace and be sold in a privatization sale in 2 years, 3 years, 5 years.

I think only once it enters into that operational mode of being in a competitive marketplace, operating with all the business-like attributes, will you have an idea as to what the time frame will be.

And what I would suggest to this committee and what I would suggest to Congress is that the time to sell is when the barriers to privatization have been eliminated, and that there is a strong track record of operating in the private market, capital market access has been established, a number of other aspects.

So that, at that time, that the maximum value can be obtained from the sale of this enterprise for the taxpayer. And I strongly agree with the time frame that has been placed in S. 210, and that is that you have a window in the neighborhood of 2 years to 5 years, or 3 years to 5 years, in which to provide that goal to enter into the private marketplace. No set point in time can I tell you when that right time is.

Senator FORD. In your statement, as I read it, are you saying, AVLIS can only be built with Federal money or with Federal loan guarantees? If that your intent?

Mr. TIMBERS. In the written testimony there is a mention about the guarantees and I think the point about this really is that we think that the decision to move AVLIS and to deploy AVLIS should be one made by the commercial marketplace, not by the Federal Government.

And that the capital raised for that should be raised by the corporation on its own credit in the marketplace. However, what we have stated in our testimony is that we do not think that $2.5 billion is a sufficient amount of capital, not only to pay for the cost of AVLIS and to pay for the ongoing capital requirements of the existing UEE system for improvements to the existing GDP plants.

In our estimation, the cost of AVLIS is going to exceed $2 billion, and for the limitations to be put on, a $2.5 billion access, strikes me as not enough money. Why constrain it today if in our judgment, you are going to have to come back later to ask for additional monies.

The second part about a guarantee is that this is essentially a start-up operation, and let us assume that this legislation passes, is signed by the President, and on September 1, 1991, this corporation starts in operation, and all the provisions of the law have been put into place.

Well, on September 2, this corporation cannot go to the capital markets. It is essentially a start-up operation and needs to access it on an incremental basis, and there will be a significant capital requirement.

So what we have suggested is that there be some initial phase of access, either through Treasury loans guarantees, access to the Federal Financing Bank for that initial start-up period. That initial start-up period is not to construct AVLIS, but to get it going, and you can limit that by a dollar amount or time period. But it is certainly to allow this company or allow this corporation to begin operations, but not necessarily to have guarantees, Federal funding for AVLIS.

Senator FORD. Let me ask you a little bit about the decommissioning fund. You say the corporation should not start collecting money to pay for decommissioning until we know how much it will cost.

How long will that take?

Mr. TIMBERS. I see absolutely no problem in starting to collect money for decommissioning and decontamination today, and as a matter of fact, through all of our analyses that we did last year, we assumed a certain amount to be established.

But before a commitment is made in terms of the level that is to be placed into a D&D fund or even the structure of that fund, it seems to me that there are a number of steps that have yet to be accomplished, that I have not seen yet.

And it strikes me that there are four basic elements to, that need to be addressed. First of all, determine what kind of technology to use. It can be anything from turnkey, and that is that turn off the plant, put a fence around it, and walk away and that is it, to the entire end of the spectrum of Green Field, which is taking all equipment away, carting it away, putting in new topsoil and putting a child's swing on top of it.

There is a lot of difference between the cost and the time to do those kind of technologies. So first determine what technology to use. Second of all, determine what the cost of that technology will be for the existing plants in Portsmouth, Paducah, together with Oak Ridge as well.

Third, to determine the allocation of that cost between military and commercial purposes, and fourth, to determine, of the commercial costs, how much of those costs have already been incurred and are what I have called sunk costs that have occurred over the past years that should not be allocated to this new corporation, and how much of those costs should be assumed by this new corporation on a going forward basis?

And is it that kind of analysis that I think should be conducted before, in a permanent way, the structure and the level of the D&D fund is established.

Senator FORD. This is my last question. Let us see if I have it correct, that you name only two fundamental areas of concern that you have with S. 210. One is the reliance on private funds to build AVLIS; and collecting the money for the decommissioning fund.

If I understood you correctly on the last one, you said you did not see anything wrong with going ahead and beginning to build that fund without knowing exactly how much it is going to cost?

Mr. TIMBERS. That is correct, yes. Put dollars into today, but recognizing the amount may be too little or too much depending on those criteria that I mentioned.

Senator FORD. Right. And then the reliance on private funds to build AVLIS and collecting—well, building AVLIS. So if that could work out, you have no fundamental problems with the way we are going?

Mr. TIMBERS. No, Senator, I do not. We have gone through in the bill and there are some other minor aspects or issues that do not——

Senator FORD. You would call those technical changes, as you would understand——

Mr. TIMBERS. Which I would be pleased to, Smith Barney would be pleased to talk to the committee staff on.

Senator FORD. You are mighty nice to do that.

Senator Wallop.

Senator WALLOP. Thank you, Mr. Chairman, and I appreciate your questions.

I have one, because one of the areas of concern that you expressed was that the $2.5 billion in borrowing authority may not be enough, but you do not suggest how much might be. How are we to adjust that figure, in order to make what you would estimate to be a responsible amount?

Mr. TIMBERS. My indication, at an initial phase of establishing a corporation is to give it more latitude than to be too constraining. I do not have what the expectation of the capital requirements of this corporation will be for the next 10 years on its own capital improvement structure, in addition to the AVLIS requirements.

But I can tell you that AVLIS, in our judgment, when everything is said and done in terms of the capital costs, is about $2.1 billion in 1990 dollars. And there is an ongoing need to improve the Paducah and Portsmouth plants and other related facilities.

So that I would be at the larger end. Why constrain them today and having the corporation come back for additional amounts? So I would talk about multiples of $2.5 billion, as opposed to going to a set amount, because we are talking about a long period of time, at least until privatization, we are talking about perhaps 5 years.

Senator WALLOP. Going back to the June 1990 report, Smith Barney is quite comfortable that the Coopers & Lybrand analysis used generally accepted accounting procedures?

Mr. TIMBERS. Yes. We are very comfortable. Not only did we develop the initial parameters in which Coopers & Lybrand conducted their analysis, but upon the completion of—and we worked with them through this analysis, but in representations to the Department of Energy, that we indicated that we agreed with the methodologies and the conclusions of Coopers & Lybrand in their analysis.

Senator WALLOP. Mr. Chairman, I know it is a part of the record, but I think it is worth reading once again, the paragraph in that June 1990 letter, says, in reliance upon the Coopers & Lybrand analysis, Smith Barney and the project team believe that there is no unrecovered costs, and in fact, there has been an over-recovery of $1.170 billion.

Put that into the perspective of the National Taxpayers' Union letter that has come to us and their position from a year ago. While I greatly respect that organization as one which generally takes the side of the U.S. taxpayer, I think in this instance they are frankly misguided.

And the misguidance, whether it is an argument over accounting procedures or otherwise, is going to result in the warning that Mr. Timbers gave us in the closing statement of his testimony, that if the United States should be competitive in the mid-1990's, it is time now to effect these changes. Failure to act will be a clear signal to both the competitors and customers that the United States does not intend to be a long-term player in the business, and customers will decide they can no longer rely on the UEE to meet their requirements and cancel their contracts.

We have already seen one instance of, not a cancelled contract, well, I guess it is a cancelled contract——

Mr. TIMBERS. Actually, a number of instances of cancellation.

Senator FORD. The notice has been given of cancellation.

Senator WALLOP. And it goes on to say the grim picture, but the worst part is that the U.S. taxpayer is the real loser. I wish we could get them to focus on the downside of their recommendation, that is that nobody recovers anything and the taxpayer incurs the great additional cost of having to clean up an entity which is no longer commercially viable at any level.

And as for the recommendations in the House that you have a set point in time, that you were to sell this, that is just a bad business practice. Any time you make a set point in time, you make it a buyer's market. They know that your deadline is coming——

Senator FORD. You have to sell it——

Senator **Wallop**. You have to sell it, and they simply wait. That is just a bad business practice. So it is my hope somehow or another that we can raise to a rational level the debate on this, so that we can in fact achieve something on behalf of the taxpayers.

If there is a small cost, but I am not prepared to believe that there is, but if there is, surely it is not as much as losing the capacity of the United States to enrich, competitively in the world, and surely it is not nearly as much as forcing the taxpayer to undertake the requirement for the clean-up for something that has no future and no commercial value.

So I really appreciate your testimony here today and I hope that we can do something on this matter.

Mr. **Timbers**. Senator, to that effect, there has been a lot of discussion. There has been a lot of sweating and fretting about unrecovered costs for years on this, and the issue is really clearly that if the money is there, that the corporation will pay back as much money as it can through dividends and the proceeds of the sale, to pay for these costs and to pay for D&D and to pay for environmental costs.

But if there is not any money, if the thing is not operating, it is a Pyrrhic victory to put tens of billions of dollars of debt on to this corporation.

Senator, I wonder if I might just conclude by, I thought, by reading two sentences from a more comprehensive testimony from last year to this committee, which I think hits this issue directly on the head: In the reality of today's competitive uranium enrichment market, the questions are no longer how much should you charge, but rather how much can you charge in the effort to maximize profits; not how best to share past costs, but rather how to minimize current and future costs so as to generate profits. In assessing the economic feasibility of restructuring the UEE, our basic tenet was that the determination of a theoretical pay-back of unrecovered costs to various parties will have little meaning if the entity responsible for the pay-back is not alive and well and generating profits to support a pay-back.

Senator **Wallop**. That says it all, and particularly, it ought to ring a loud bell in this last year or so of some major bankruptcies, when private American corporations, having undergone restructuring have been able to spin-off, one thing or another, to become again viable participants in the economy of the United States.

The alternative is for everybody to lose. That is just plain, ordinary business reality, whether the Government is doing it or not, and that is a particularly useful pair of sentences. I appreciate it.

Senator **Ford**. Thank you very much, Mr. Timbers. We appreciate your effort and your courtesy and look forward to visiting with you again some time.

This hearing is closed.

[Whereupon, at 3:40 p.m., the hearing was adjourned.]

APPENDIX

Responses to Additional Questions

Department of Energy,
Congressional and Intergovernmental Affairs,
Washington, DC, April 11, 1991.

Hon. Wendell H. Ford,
Chairman, Committee on Energy and Natural Resources, Subcommittee on Energy Research and Development, U.S. Senate, Washington, DC.

Dear Mr. Chairman: On March 7, 1991, W. Henson Moore, Deputy Secretary, accompanied by William H. Young, Assistant Secretary for Nuclear Energy, testified before your subcommittee on S. 210, The Comprehensive Uranium Act of 1991.

Following the hearing, you submitted written questions on behalf of yourself and Senators Wallop, Johnston and Wellstone to supplement the record. Enclosed are the answers to those questions.

If we can be of further assistance to you or your staff, please contact our Congressional Hearing Coordinator, Barbara Campbell on (202) 586-8238.

Sincerely,

Jacqueline Knox Brown,
Assistant Secretary.

[Enclosures.]

Questions From Senator Malcolm Wallop

URANIUM ENRICHMENT RESTRUCTURING LEGISLATION

Question 1: Two year ago, Secretary Watkins has supported early enactment of comprehensive uranium legislation and, last year, during testimony before this Committee you stated that "we believe that it is necessary to restructure the uranium enrichment enterprise in the United States and have proposed legislation to create a Government owned enrichment corporation."

At the time, both the Administration and the Senate viewed the need for such legislation as critical. Would you agree that that need is even more critical today?

Answer: Yes. Enrichment restructuring legislation is vitally important as the most effective means to give the U.S. uranium enrichment enterprise the greatest future commercial flexibility and competitive edge.

Question 2: In a 1989 report to the President, the Department of Commerce concluded that, "uranium plays a critical role in the national security and energy dependence of the United States".

Do you agree with that statement?

Answer: I agree that uranium plays a critical role in the national security and energy security of the United States.

Question 3: For more than five years this Committee has labored with this critical matter only to have legislative proposals die in the House. As you are aware, last year the Senate included uranium enrichment legislation in its fiscal year 1991 reconciliation legislation; however, those provisions were dropped in conference with the House. At that time, Chairman Sharp and others agreed to act on such legislation early in this Congress.

Based upon your discussions with the House, what is your understanding of their plans with regard to this legislation? Do they fully recognize the critical need for this legislation?

Answer: Chairman Sharp agreed, during last year's budget reconciliation process, to make enrichment legislation a priority in the 102nd Congress. Chairman Lloyd and Representative McEwen have reintroduced enrichment legislation again this year. I would hope that the House now has a greater awareness than ever of the urgency for enrichment legislation. Chairman Sharp held a hearing on April 10 on enrichment legislation, and I expect Chairman Lloyd will hold a hearing on this legislation and give this matter serious attention.

The Department is committed to working with all key members and the Committees of jurisdiction in the House for the passage of legislation this year.

Question 4(a): Efforts by the Congress and the Administration to develop a national energy strategy are based upon a concern for the United States continued reliance on oil imports from the Middle-east because of its political volatility.

Do you agree that any national energy strategy we formulate should foster greater reliance on all domestic energy sources?

Answer: It is important for our Nation's energy security to have strong, competitive, and economical sources of domestic energy supply. We believe that the National Energy Strategy formulated by the Department and approved by the President fosters greater reliance on all domestic energy sources.

Question 4(b): If we are serious in this regard, should the Congress and the Administration be concerned about reports that the Soviet Union is dumping uranium and enriched uranium onto international markets?

Answer: The Administration is very concerned about the situation, and I hope that other members of Congress recognize the serious ramifications if the reports that there is dumping prove to be accurate. Dumping injury has not been determined, however.

Soviet uranium and enriched uranium sales are at low prices presently and are anticipated to continue on a long-term basis.

URANIUM INDUSTRY VIABILITY

Question 5: The domestic uranium industry supplied all of our uranium requirements 10 years ago. This year they will supply about 20 percent. At one time we had 26 mills and some 350 mines operating in this country. Now we are down to two mills and five mining operations. In my judgment it is important to maintain a viable uranium mining industry. Would you agree?

Answer: In that regard the Department is currently pursuing a number of actions for helping the domestic mining and milling industry in the future. First, as part of the National Energy Strategy, options are being developed to facilitate expansion of nuclear power in the United States (U.S.). Growth in nuclear power would result in a higher demand for uranium thus enhancing the potential for greater sales of domestic uranium. Second, we are continuing to support the domestic industry in their foreign sales efforts in the same manner that resulted in contract commitments from Japan in late 1988 and early 1989 to purchase almost $350 million of uranium from U.S. producers. Finally, the Department will renew efforts with Congress to seek enactment of legislation to create a Government corporation for uranium enrichment as an initial step toward privitization. Strengthening the U.S. uranium enrichment industry should have important reinforcing effects on the domestic mining industry since utilities that purchase U.S. enrichment services are more likely to buy uranium from domestic suppliers. If all, or any, of these efforts are successful, a more positive market situation will be created that could facilitate the revitalization of the domestic uranium industry.

SOVIET MARKET PRACTICES

Question 6(a): During his 1989 confirmation hearing, Admiral Watkins expressed the opinion that sales of Soviet SWUs to U.S. utilities posed a very real threat to DOE's market share.

Would you agree that no matter what your vantage point, whether you view this matter from the perspective of the bureaucrat or the budget cruncher, or the taxpayer, or DOE's customers, the Soviets marketing practices must be viewed as a threat to DOE's enrichment enterprise and the Enrichment Corporation that this legislation would establish?

Answer: We are devoting special attention to the market challenge from the Soviet sale of enrichment services at low prices—in the spot market and, particularly, in the long-term market. In October 1990, the Soviets made a significant penetration into the U.S. market by signing an 8-year contract worth about $250 million, for sales to The Yankee Group starting in 1994. This represented the first time that any U.S. utility had signed a long-term contract with the Soviets. Conditions at this time prevent the U.S. uranium enrichment enterprise from addressing this situation from a commercial standpoint. However, we are monitoring existing and prospective Soviet sales in the United States to determine if future action is needed.

Question 6(b): Has the Soviet Union increased its marketing activities since 1989?

Answer: The market posture of the Soviet Union has changed dramatically during the past year. They have gone from being a spot market supplier to signing a long-term contract to supply the Yankee group of U.S. utilities. We believe that the Soviets are targeting the U.S. market.

Question 6(c): The Soviet Union is selling SWU's at about half the DOE price. In your judgment, do their prices bear any relationship to real production costs?

Answer: We do not have access to Soviet production costs that could then be compared to their prices in order to make this judgment. We understand that sales of Soviet enrichment services are being made at low prices in the range of $55 to $70 per SWU.

Question 6(d): In your judgment, is the Soviet Union dumping uranium and enriched uranium onto international markets?

Answer: Any official determination on whether Soviet sales represent "dumping" would be made by the Commerce Department and International Trade Commission as part of a formal investigation and not by DOE. The Soviets current prices are well below that offered by DOE. DOE is currently gathering information on and evaluating the latest Soviet marketing and pricing practices.

Question 6(e): Has DOE undertaken any studies or analysis of Soviet marketing or pricing practices?

Answer: An evaluation of Soviet marketing and pricing practices with respect to uranium enrichment services was conducted last year. Since that evaluation the Soviets have converted their production capacity to sole reliance on gas centrifuges. Also, the recent transaction involving an 8-year sales contract with the Yankee Group of U.S. utilities was not taken into account. Therefore, we are currently updating our previous evaluation to incorporate these changes to ensure that it reflects conditions that more accurately describe Soviet marketing and pricing practices.

Question 7(a): In its 1991 and 1992 budget requests, the Administration has indicated its interest in buying Soviet uranium and SWUs to meet its contractual obligations to U.S. utilities.

What quantities of SWUs are involved?

Answer: First, let me clarify to avoid any possible misunderstanding. Our budget requests do not seek approval for the possible purchase of separative work units (SWUs) solely from the Soviet Union, but rather seek approval to purchase material from several potential sources. The purchase of enrichment from other sources at prices below our incremental cost of production or marginal cost represents a sound business practice. This business practice is one that commercial businesses routinely exploit to their economic advantage. We believe this flexibility would help improve the commercial capability of the existing enrichment enterprise.

Several sources of enrichment exist that could be explored in terms of potentially purchasing at prices less than our marginal cost of production. These include 1 million SWUs from the Federal Republic of Germany (German inventory of U.S. supplied enrichment), 1.1 million SWUs from Italy (excess inventory), 0.8 million SWUs from the United Kingdom (excess inventory), 1.6 million SWUs from domestic and foreign utility excess inventories, and an unknown amount of excess inventory or production capacity from other suppliers, including the Soviets.

Question 7(b): What is the status of such negotiations?

Answer: We have not engaged in negotiations with the Soviets.

Question 7(c): How would DOE structure these purchases to avoid injury to our domestic uranium industry?

Answer: If the Department made the purchases, we do not believe that they would adversely affect the U.S. uranium industry. We would not purchase uranium—only the enrichment services. Natural uranium feed would be returned to the Soviets. Our customers would still be required to provide their own feed, so the uranium industry would be unaffected, from that standpoint. If, on the other hand, U.S. utilities buy Soviet enrichment services directly, we believe there is a greater likelihood that they would also purchase the natural uranium component of the finished product from the Soviets, which could further hurt the U.S. uranium industry. Frankly, our hope would be that our improved competitiveness would attract more customers who, in turn, would find it more convenient to purchase domestic uranium.

Question 7(d): If Federal government were to purchase of Soviet uranium or SWUs, what effect would such purchases have on their ability to pursue a "dumping" case should it be justified?

Answer: I cannot imagine that we would pursue both efforts simultaneously. Our efforts now are focused on determining which among a variety of possible responses to the Soviet market challenge is the most appropriate.

If Soviet SWUs are purchased by the Federal Government, such transactions would be conducted consistent with fair trade practices. Therefore, there should be no impact or effect on any future dumping case involving unfair trade practices.

Question 8(a): At the hearings you were furnished with legislation that I am considering introducing (copy enclosed). The legislation is intended to protect the United States from the threat posed to our national security and defense interests by the Soviet Union's uranium sales practices.

Is there sufficient reason for the International Trade Commission to look into current uranium sales practices of non-market economy countries and other countries which compete with DOE's enrichment services?

Answer: The International Trade Commission (ITC) is responsible for determining whether substantial injury to a domestic company has occurred as part of a formal process of investigating whether unfair trade practices exist. However, the ITC can only proceed after the International Trade Administration within the Commerce Department has made a positive determination that "dumping," i.e. sales at less than fair market value, has occurred. Therefore, until the ITA makes a positive "dumping" determination, the ITC will not have sufficient reason to look into this matter.

Question 8(b): Would the Federal government benefit from more information on the "country of origin" uranium or uranium enrichment services being provided to domestic utilities?

Answer: Yes, more information would be useful in monitoring the "country of origin" of uranium or uranium enrichment services involved in multiple party transactions between the original supplier and eventual owner.

Question 8(c): Some utilities expressed concern that should they purchase domestic uranium or enriched uranium at prices higher than they can obtain their needs internationally that their domestic purchases will be questioned by State regulatory bodies as prudent. Is this a valid concern?

Answer: I understand the need for domestic utilities to purchase the most economical supply of uranium or enriched uranium possible. I also understand the need for domestic utilities to avoid a large dependency on unreliable or foreign sources of supply. Some reasonable balance between these two needs is often applied in determining prudency. Further, domestic utilities should assure that their purchases are made in accordance with fair trade practices in a free market. We believe that utility needs can best be met by a cost effective U.S. uranium enrichment enterprise. We also believe that establishing a Government corporation leading to eventual privitization is the best way to avoid this problem.

Question 8(d): If the principal objective of the legislation before this Committee is to assure that DOE's uranium enrichment enterprise remains economically viable, are Soviet Union's marketing practices of sufficient threat to DOE and the Corporation that consideration should be given to requiring that certain minimum percentage of uranium be enriched in the United States?

Answer: A Government corporation or other private entity would have much greater flexibility in addressing all market challenges, including the Soviet market challenge. We believe that such an entity with commercial flexibilities would be able to effectively compete with any enrichment competitor in a free market where fair trade practices are being followed.

Question 8(e): In light of your answers to the above questions, what comments do you wish to make on the proposed legislation?

Answer: In general, we believe that existing statutes and procedures are adequate and that additional legislation in this specific area is unnecessary. We are currently gathering information on and evaluating the latest Soviet marketing and pricing practices for uranium enrichment services. Moreover, we believe that existing statutes and procedures offer a more equitable approach than does the proposed legislation toward the sale of uranium, enriched uranium, or uranium enrichment services at prices lower than the cost of production. Existing procedures require that injury to a U.S. party be demonstrated before relief is granted, which the proposed legislation does not.

Relief such as countervailing duties applied to the specific goods or services that are causing injury are generally designed to restore free market equilibrium. The proposed legislation, on the other hand, would penalize domestic reactor owners or operators, and ultimately, electricity consumers, by prohibiting the purchase of another country's uranium, enriched uranium and enrichment services even if only one of these was sold below production cost.

The Administration also believes that the punitive provisions of the proposed legislation should not automatically take effect, foreclosing pursuit of better alternative solutions which may be available through negotiations or other trade laws.

Finally, rather than requiring utilities to purchase at least two-thirds of their enriched uranium or enrichment services requirements from domestic sources and protecting these utilities from charges of imprudence on national security grounds, the Administration believes that its proposed legislation to restructure the enrichment enterprise is the best approach. Restructuring the enterprise to create a corporation that can compete in today's international enrichment markets will allow us to achieve our national security, energy security, and environmental concerns without the harm to the economy and consumers that mandated purchases could cause.

Question 9: Conservative estimates by DOE officials are that the Soviets have at least 3 to 5 million SWU's available annually for export—most of which will be targeted on the U.S. market. By comparison, three million SWU's exceeds the United State's total 1990 uranium production of about 9 million pounds of uranium oxide. Three million SWU's also constitutes about one-fourth of DOE's current annual SWU production.

What would be the effect on DOE's enrichment enterprise if the Soviet Union was to dump three million SWU's onto the international market?

Answer: The effect on DOE of 3 million Soviet SWUs being made available annually for export will depend upon the price that the Soviets offer and their success in competing with DOE and other suppliers. The most likely target for these Soviet SWUs is DOE's current market, most of which would be in the United States after 1995.

In the worst case scenario, where the 3 million Soviet SMUs would replace potential DOE sales, the loss to DOE would be about $300 million in revenues each year. If this were to occur, it would hurt our ability to recover costs and reduce our potential return to Treasury by over $1 billion over the next 10 to 12 years.

Question 10: Some U.S. utilities have begun to directly purchase Soviet enrichment services under long-term contract, rather than the previous practice of buying Soviet uranium on the spot market for enrichment in the United States. In October 1990, Yankee Atomic Electric and other companies have contracted for as much as $250 million for Soviet enrichment services during the period 1994 to 2002.

Are you concerned for the effect of such trends in utility purchases on DOE's enrichment enterprise?

Answer: Yes. We consider the sale of Soviet SWUs in the United States on a long-term contract basis as a serious market challenge. Conditions at this time prevent us from addressing this situation from a commercial standpoint. However, we are monitoring existing and prospective Soviet sales in the United States to determine if future action is needed.

Let me say again that passage of restructuring legislation by Congress represents the most effective means to give the U.S. uranium enrichment enterprise the greatest commercial flexibility and competitive edge. We look forward to working closely with you in making such legislation a reality at the earliest possible time.

Questions From Senator Wendell H. Ford

FOREIGN COMPETITION

Question 1(a): How many former enrichment customers has the Department lost to foreign competitors?

Answer: From 1984 to today, six domestic utilities have purchased their enrichment needs from sources other than DOE, and we currently expect them to continue to purchase from other sources of supply. In addition, 22 utilities (17 domestic and 5 foreign) have terminated some portions of their enrichment contracts with DOE from 1995 through the year 2000 and are receiving bids from foreign competitors for their enrichment needs.

Question 1(b): How many dollars worth of enrichment business has the Department lost to foreign competitors?

Answer: To date, about $1.4 billion in sales have been lost from 1995 through the year 2000. Our customers are receiving bids from foreign competitors for their enrichment needs.

DECONTAMINATION AND DECOMMISSIONING

Question 2(a): In its independent financial assessment of the enrichment enterprise, Smith Barney found the Department's decontamination and decommissioning (D&D) cost estimates to be unreliable. Smith Barney noted that existing cost estimates failed:

—to assess the amount of chemical and radioactive contaminants at the sites;

—to identify the environmentally acceptable level of D&D used as the objective; and

—to assess the appropriate allocation of D&D liability among commercial and governmental customers.

Smith Barney recommended that a "complete D&D study be commenced."

Has the Department begun such a study?

Answer: Yes. The Department has awarded a contract to EBASCO Services to make a D&D study.

Question 2(b): Will it provide all of the information identified by Smith Barney?

Answer: Yes. The amount of chemical and radioactive contaminants at the sites will be assessed and estimates will be made as to the costs associated with removal of these contaminants. Based on contamination levels and past plant usage information, the study will classify material as nonhazardous, hazardous, radioactive, or mixed waste in order to determine storage and disposal costs. If demolition of a facility were to be the chosen D&D alternative, costs for remedial action required by environmental regulations will be included in the estimate, as well. Costs for temporary storage, final disposal, and/or treatment of waste generated by the D&D effort and waste stored at the site resulting from past gaseous diffusion operations will also be included in the estimate.

The environmentally acceptable level of D&D used will be based on the Nuclear Regulatory Commission's definition of facility decommissioning—"to remove (a facility) safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of license."

The allocation of D&D liability among commercial and government customers will be assessed as a part of the study. Historically, for planning purposes, a 50/50 split between commercial and government customers has been assumed. This assumption will be further evaluated as the study progresses.

Question 2(c): When will it be completed?

Answer: The study is scheduled for completion in September 1991.

URANIUM-ATOMIC VAPOR LASER ISOTOPE SEPARATION

Question 3(a): AVLIS enriches uranium in a different form than the gaseous diffusion plants. Facilities will be needed to convert yellowcake into the metallic form used by AVLIS and to reconvert the enriched uranium into the form used in nuclear fuel.

Please provide a description of the AVLIS fuel cycle.

Answer: In the U-AVLIS process, yellowcake is converted to uranium metal that is the feed material to the separator. There are domestic suppliers capable of providing limited quantities of uranium metal today. Development work is underway in the U-AVLIS program to develop and demonstrate processes that are lower cost and environmentally preferable to existing conversion methods. The exact method of converting the yellowcake to metal for a large U-AVLIS plant will depend on a number of factors including demand, existing capacity, status of the development efforts and industrial preferences.

Enriched uranium metal product from a U-AVLIS plant must be converted to a form suitable for use by the existing fuel fabricators. Two conversion processes are under consideration. One would convert the metal to uranium oxide for delivery to the fabricators; the other would convert it to uranium hexafluoride. A cooperative program with the fabricators is underway to determine a preferred approach.

Question 3(b): Do conversion facilities now exist to support the AVLIS fuel cycle?

Answer: The domestic industry has existing facilities capable for producing limited quantities of uranium metal as feed for a U-AVLIS plant. Additional capacity would be needed to supply larger amounts of uranium metal feed. On the product or back end of a U-AVLIS plant, facilities would have to be modified or constructed to convert the enriched uranium metal to a form suitable for use by the fuel fabricators. We are currently working with the domestic industry to determine the best means to provide capacity, including ways that we can assist the industry in applying known technologies for new capacity that could be more economical and environmentally acceptable.

Question 3(c): If not, who do you expect to build and operate these facilities?

Answer: We currently have a cooperative program with the fuel fabricators and will soon initiate one with the feed suppliers to determine the best approach to integrating U-AVLIS into the existing fuel cycle. To the extent that it is feasible and acceptable to the industry, we intend to transfer known fuel cycle technologies to the industry that are more economical and environmentally acceptable than existing processes being used. These cooperative programs will include an identification by the industry of ways that sufficient production capacity can be put in place consistent with future production plant capacity.

Question 3(d): How much will they cost to build and operate?

Answer: Over the next year, we plan to work with industry to determine a cost estimate for feed and product facilities that would be used to support a U-AVLIS fuel cycle. The costs will depend on a number of variables including the capacity required to meet demand, which technologies and practices are used and the extent that existing facilities will be used. Cost estimates over the range of these variables are expected to be available by the end of 1992.

The staff at the Lawrence Livermore National Laboratory and Martin Marietta Energy Systems are currently preparing a conceptual design for a U-AVLIS production plant. As part of this design effort and based on the designers' knowledge of the existing fuel cycle industry, cost estimates for converting uranium ore to metal and U-AVLIS metal product to uranium oxide nuclear fuels are being prepared. For product conversion the cost for two processes will be estimated. One is based on conversion of uranium metal to uranium hexafluoride and the other on preparing a uranium oxide that could be used to fabricate fuels for light water reactors.

Question 3(e): Do AVLIS SWU price estimates take the cost of conversion into account?

Answer: Because the fuel cycle for the AVLIS process differs from the well established uranium hexafluoride-based enrichment processes, we have historically included the cost of conversion to allow for direct economic comparison of uranium enrichment processes.

Question 3(f): If not, how will conversion costs impact the profitability of AVLIS?

Answer: As previously stated, the U-AVLIS SWU cost estimates consider the cost of conversion.

Question 4: Please summarize the findings of the Department's recent reassessment of alternative ways of operating or disposing of the enrichment plants. With respect to each alternative considered, please provide the anticipated cost or benefit to the taxpayer.

Answer: A summary of the results of our recent reassessment in which we qualitatively summarize the pros and cons of potential options follows.

URANIUM ENRICHMENT ENTERPRISE OPTIONS

Options available to the U.S. Government for the future management of the uranium enrichment enterprise include the creation of a Government corporation leading to eventual privatization, remaining as a Government program, immediate sale of the business to the private sector, leasing the business, and merely having the Government go out of the business. The present day starting point for the Department's enrichment enterprise includes the following assets and liabilities: $8 billion in sales value of existing contracts through 1999, existing gaseous diffusion production facilities at Paducah, Kentucky, and Portsmouth, Ohio, a promising laser enrichment technology that has the future potential of enriching uranium at 50 percent of the cost of other processes and a future estimated liability of $1.5 billion for the commercial share of the eventual decontamination and decommissioning (D&D) of the existing enrichment plants. Another existing factor is an increasingly competitive market that is requiring more aggressive implementation of commercial flexibilities by all suppliers. All future options for the uranium enrichment enterprise have the same potential opportunity for future earnings, but only the most aggressive, most businesslike operation will be able to capitalize on those opportunities and realize maximum value from the enrichment business.

Creation of a Government corporation leading to privatization yields the greatest return to the taxpayer. All options other than a Government corporation leading to privatization are expected to generate less return to the taxpayer from the enrichment business. A Government corporation will aggressively manage the enterprise with a profit motivation using the necessary commercial flexibilities to capture future sales that would generate the maximum net revenues. A Government corporation could operate for a reasonable period of time (e.g., 5 years) during which any barriers to eventual privatization can be analyzed and, where possible, removed. During this period of time, a Government corporation could establish a history of successful operating and financial performance, i.e., a track record, that would provide the incentive for private interests to pay the highest possible price for the business. Establishing a Government corporation as an interim step toward privatization would also provide sufficient time to go through the process of seeking and obtaining a Nuclear Regulatory Commission (NRC) license for the existing enrichment facilities and for a future Uranium-Atomic Vapor Laser Isotope Separation (U-

AVLIS) production plant. Another benefit would be the commercial share of future environmental liabilities including D&D would be assumed by the Government corporation along with a firm obligation to set aside sufficient funds for the future D&D liability from revenues collected from commercial customers.

An enrichment program that remains in the Government will be severely limited in its ability to operate as a competitive business that can implement market-sensitive production and pricing and contracting policies without being subjected to other conflicting political, policy, and budget objectives. The net result will be fewer sales in a competitive market with a lower return to the taxpayer from revenues. Reduced net revenues would also preclude the possibility of financing a new U-AVLIS production plant with internally generated funds, with the most dire case resulting in the eventual demise of the business around the turn of the century.

Transition of the business by its immediate sale to the private sector would provide an improved organizational framework for successful operation of the business. It is expected that a private sector entity could realize the same future earnings as a commercially-oriented Government corporation. However, the risks of future contingent environmental liabilities, the uncertainty in terms of obtaining a license from NRC, and the need to return sizable profits to private shareholders from future earnings all contribute to a smaller price that a private firm would presumably pay for the business. This is emphatically the case for a sale today in the absence of a financial track record for the uranium enrichment enterprise operated outside the Government. Also, a private sector entity would likely require that the Government retain the entire liability for D&D as a condition of the sale, but might accept the responsibility to collect for D&D. The net result is that, if successfully sold, the taxpayer would receive an immediate payment, but it would be relatively small.

Leasing the existing enrichment business to a private entity could also bring many of the commercial practices to bear that could help improve its competitive position. However, in order to provide sufficient incentive to the lessee to maximize future earnings, payments from the lessee to the Treasury would have to be minimal, and thereby the return to the taxpayer would be reduced. In addition, the lessee would probably also refuse to assume responsibility for past and future environmental liabilities (e.g., D&D) unless broadly indemnified by the Government.

Another option would be for the Government to decide to go out of the enrichment business and let the private sector meet future customer needs for enrichment services. A variety of options were examined including continued operation of two gaseous diffusion plants (GOP), operating only one GOP, selling U-AVLIS to the private sector, and immediate shutdown of all operations. All variations of this approach result in a return to the taxpayer that is limited by the value of existing contracts. The net result is a smaller return from the business than a restructuring which would create a Government corporation leading to privitization and a reduced ability to cover the commercial share of the future environmental liabilities. If the Government went out of the business, all it would be left with would be two almost worthless enrichment plants and the complete liability for D&D.

Smith Barney's independent evaluation of the uranium enrichment enterprise supported the Department's original conclusions. After reviewing all available future options, Smith Barney once again endorsed the approach of establishing a Government corporation as a first step to privitization as the most viable form of business that could compete effectively in the existing competitive marketplace. They stated that this was preferable in terms of removing obstacles to eventual privatization and providing a track record that would provide optimal value to Treasury in terms of both the price received from a future privatization sale and annual cashflow available for distribution to the Government.

In summary, compared to the Government corporation leading to privitization case, all other options provide a lower financial return to the taxpayer.

QUESTIONS FROM SENATOR J. BENNETT JOHNSTON

AVLIS DEPLOYMENT

Question 1: This Committee is very concerned about the Department of Energy's decision not to request funding for deployment of AVLIS beginning in fiscal year 1992. The Administration has made the decision that any investment in deployment of AVLIS should be done by the private sector. The Administration is proposing, therefore, that DOE only complete the remaining R&D.

Does the Department still believe that AVLIS is essential if the uranium enrichment enterprise it to be competitive over the long term?

Answer: A number of actions are needed to make the enrichment enterprise competitive, including cost reductions and market initiatives to capture new sales. The U-AVLIS technology has the potential to enrich uranium at a cost of production that is about 50 percent lower than any other enrichment process. Therefore, we continue to believe that the eventual deployment of the U-AVLIS technology by a Government corporation will enhance the ability of the enrichment enterprise to effectively execute actions that would make it competitive over the long term.

URANIUM-ATOMIC VAPOR LASER ISOTOPE SEPARATION

Question 2: Why, then, has the Department chosen to discontinue its involvement at this point?

Answer: The Administration continues to believe that investments in AVLIS production capacity would be more appropriately made by the private sector. The Administration has decided to again promote legislation in the 102nd Congress to establish an interim Government Corporation that could make these investments. We plan to work closely with Congress this year to make this legislation a reality at the earliest possible time.

AVLIS DEPLOYMENT

Question 3: We are all committed to enacting S. 210, but isn't the Department putting all of its eggs in one basket to assume that a corporation will be enacted quickly enough so that no time is lost on getting AVLIS deployed?

Answer: Clearly, the creation of a corporation represents the best means to ensure investment in, and deployment of, the U-AVLIS technology, and we are encouraging Congress to take prompt action on this legislation. Prompt enactment of restructuring legislation would minimize the delay.

URANIUM-ATOMIC VAPOR LASER ISOTOPE SEPARATION

Question 4: Isn't there a risk that crucial time will be lost in the development of the AVLIS technology by terminating the Department's deployment efforts this year?

Answer: The terminations of predeployment activities in FY 1992 will not affect the technology demonstration program that is currently on schedule for completion by September 1992. However, we project that U-AVLIS deployment might be delayed based on the FY 1992 budget proposal. Should a corporation be established by Congress this year, we would expect that such a corporation would be in a position to make the necessary investments to deploy U-AVLIS on a schedule that minimizes delay in order to maximize market value.

AVLIS DEPLOYMENT

Question 5: What if the corporation bill is not enacted? How will DOE catch up so that there is still a chance for the enterprise to capture any uncommitted sales?

Answer: If a corporation bill is not enacted in this Congress, the Administration will have to reevaluate its decision regarding U-AVLIS deployment.

Question 6: Isn't it a high-risk strategy to assume that the private sector will immediately pick up AVLIS?

Answer: We anticipate that Congress will give serious consideration to the need to establish a corporation. We believe that a corporation can effectively take over and then deploy AVLIS. We are confident enough of the technological and cost prospects for AVLIS to believe that the private sector will recognize them and decide promptly to invest in the technology which will have been fully demonstrated by DOE. If Congress acts promptly, the risk will be minimized.

URANIUM-ATOMIC VAPOR LASER ISOTOPE SEPARATION

Question 7: What will the Department be doing to encourage private sector involvement in AVLIS?

Answer: There has been considerable "industrial involvement" in the AVLIS program over the years, and that involvement continues today. A number of major industrial firms are currently involved in the development of the AVLIS technology and the design of a production facility. Martin Marietta Energy Systems has a major role in both of these activities; while Bechtel Corporation and Stone and Webster are active participants in the conceptual design currently being performed for a future AVLIS production plant. In addition, more than 2000 companies have supplied and continue to supply the Lawrence Livermore National Laboratory with components and parts, such as electronics, optics, ceramics, switches. vacuum vessels, i.e., most of the components for the demonstration.

Question 8: AVLIS development is currently in the hands of Livermore National Laboratory. How will potentially interested companies gain access to this technology to assess whether they would want to get involved?

Answer: Once the corporation is formed, it would have flexibility to pursue whatever industrial involvement it feels is appropriate. We would expect that a corporation will aggressively integrate industrial entities in efforts to transfer the U-AVLIS technology to commercial use. Such efforts will likely include activities similar to some planned by the Department, but now deferred, such as the industrial access program and use of a commercial deployment contractor.

DECONTAMINATION AND DECOMMISSIONING

Question 1: S. 210 would establish a fund in the Treasury to collect money for decontamination and decommissioning of the enrichment facilities. Money would be collected through the SWU price. Our bill does not establish a set fee, but instead directs the corporation to collect 50 percent of the total cost of D&D by 2000 and to set its SWU price accordingly.

Do you believe that this mechanism will allow for sufficient money to be collected for D&D?

Answer: The decontamination and decommissioning (D&D) provision of S. 210 represents a reasonable means to eventually provide sufficient revenues for the commercial share of D&D liabilities at the enrichment plants.

Question 2: Would it be better to establish a set amount to be collected per year?

Answer: The Administration's bill, as proposed in the last Congress, provided for an annual payment of $50 million per year into the decontamination and decommissioning (D&D) fund. We preferred a set annual amount as this approach ensured early payments into the fund and increased confidence that the enrichment corporation could collect sufficient funds from customers to meet the commercial share of the total D&D liability.

Question 3: Is enough known about the total costs of D&D to do that?

Answer: We have believed that our current estimate of $1.5 billion as the commercial share of the total cost of D&D represents a sufficient basis to establish an annual collection of $50 million from enrichment customers. Estimates of the total D&D costs will have to be updated periodically to reflect the most current environmental requirements and technological advances in environmental remedial, waste disposal or decommissioning that could be applied to D&D of the enrichment plants.

Question 4: In past years, the Department has requested $50 million to put aside for D&D. Would this be an appropriate amount to put aside each year?

Answer: Payments of $50 million per year in an interest bearing Treasury account would yield approximately $1.5 billion in 15 years; we have believed that this payment schedule is appropriate to meet this future D&D liability. Our current estimate of the commercial share of the total D&D liability is about $1.5 billion.

Question 5: Has the Department run any numbers to determine what amount would need to be put aside each year in order to have a reasonable D&D fund available when the time comes to decommission these facilities? If so, would you willing to provide those numbers to the Committee?

Answer: We believe that it is reasonable to set aside revenues into a decontamination and decommissioning (D&D) fund now to assure that funds will be available to decommission the plants when the time comes. We proposed in the last Congress to recover the commercial share of these costs over the next 15 years from the sale of enrichment services to our commercial customers. The following table shows an annual payment of $50 million will provide $1.5 billion in 15 years assuming an average interest rate of just over 8 percent.

[Dollars in Millions]

Year	Annual payment	Annual interest	Total
1	$50	$4	$54
2	50	9	59
3	50	13	63
4	50	19	69
5	50	24	74
6	50	31	81
7	50	37	87
8	50	44	94
9	50	52	102
10	50	61	111
11	50	70	120
12	50	80	130
13	50	90	140
14	50	102	152
15	50	114	164
Total	$750	$750	$1,500

Questions From Senator Paul Wellstone

DECONTAMINATION AND DECOMMISSIONING

Question 1: According to the Smith Barney study, DOE's civilian enrichment program has accumulated billions of dollars in liabilities for environmental remedial action and decommissioning costs. S. 210 sets up a fund to pay for these liabilities, but freezes in place DOE's uranium enrichment contract with nuclear electric utilities. These contracts set prices so low that it seems unlikely the fund will build up anywhere near the money needed.

Have you any analysis that shows that the taxpayers will not end up paying the billions of dollars for environmental remedial action and decommissioning for the enrichment facilities?

Answer: With regard to the environmental and remedial action liabilities identified by Smith Barney, the Department is recovering these costs as they are incurred through prices to our customers.

Our estimate of the commercial share of the decontamination and decommissioning (D&D) costs of our gaseous diffusion plant is $1.5 billion. For the past several years, we have proposed to Congress legislation establishing a fund in the Treasury for the collection of money earmarked for D&D, preferably as part of comprehensive uranium enrichment restructuring legislation. Had a fund been established when we first recommended it, it would already have accumulated about $170 million. We believe that a fund established this year would still be able to accumulate the necessary $1.5 billion by the time it is needed—sometime after 2005 at the earliest. In this way, the taxpayers would not be stuck with a bill for the commercial share of D&D.

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Question 2: In the answer to my question at the hearing about the proliferation potential of the AVLIS technology, Mr. Young indicated that AVLIS was designed to produce reactor grade (4% enriched) not weapons grade (90% enriched) uranium.

Does that mean that this technology could not be used to produce weapons grade uranium, with multiple passes or in some other application of the apparatus or a modified version of the apparatus?

Also, Mr. Young did not respond directly to the question of whether this technology or a modified version of it could be used to separate out weapons grade plutonium from spent nuclear reactor fuel. If the AVLIS technology or some modified version of it can be used to produce weapons grade uranium or plutonium, please discuss the potential role of AVLIS in making it possible for so-far nonnuclear weapons states to obtain nuclear bombs.

Answer: The design and equipment that we have developed for our U-AVLIS program cannot be used to produce weapons grade uranium, whether multiple passes or any other scheme is tried. This does not mean that the technology is incapable of producing weapons grade uranium, assuming a major redesign of the enrichment chamber. Such a chamber would have little resemblance to that used for reactor grade uranium. Nevertheless, strong nonproliferation controls that are applied to all enrichment technologies, as required by the Atomic Energy Act, are adequate to prevent U-AVLIS, or any other enrichment technology, from being obtained or employed by unauthorized persons or nations.

The AVLIS technology could be used to separate plutonium isotopes. The R&D and design of a plant to separate plutonium isotopes produced in DOE's production reactors were completed as part of the Special Isotope Separation (SIS) program funded by the Office of Defense Programs. The plant project was cancelled in 1990 when it became clear that the material would not be needed. It should be emphasized that the SIS program was designed to work on only plutonium separated from spent fuel from DOE's defense reactors and not from civilian spent fuel from nuclear power plants.

U-AVLIS technology is a very highly advanced technology that extends the limits of the state of the art. A potential proliferator would need a large core of very highly trained scientists and engineers as well as a large industrial infrastructure to develop a weapons production capability using the AVLIS technology. A potential proliferator would require large financial, technical, and industrial resources and require a considerable length of time.

An assessment of the proliferation potential of the AVLIS technology was performed by an independent group of consultants from the Massachusetts Institute of Technology in 1985. The executive summary stated that ". . . for approximately the next decade, and possibly longer, it is unlikely that a nation whose goal is to minimize risk in the production of significant amounts of highly enriched uranium (HEU) would choose AVLIS for that purpose, irrespective of any U.S. decision to proceed with further development of these technologies. To the extent that a nation wants HEU for weapons . . . a more logical, but not unique, choice would be lower technology centrifuges . . ."

U.S. SENATE,
SUBCOMMITTEE ON ENERGY RESEARCH AND DEVELOPMENT,
Washington, DC, March 8, 1991.

Mr. WILLIAM H. TIMBERS, JR.,
Managing Director, Smith Barney, Harris Upham & Co., Inc., 1345 Avenue of the Americas, New York, NY.

DEAR MR. TIMBERS: I want to thank you for your testimony yesterday before the Subcommittee on Energy Research and Development on S. 210, the Comprehensive Uranium Act of 1991, and on the state of the Department of Energy's uranium enrichment enterprise.

Your testimony and insight on this issue was helpful to the Subcommittee. We will provide you a copy of the printed hearing record when it becomes available.

Thank you again, and I look forward to working with you in the future.

Sincerely,

WENDELL H. FORD, *Chairman.*

[COMMITTEE NOTE: The answers to the following questions requested of Mr. Timbers, by the committee, were not received at the time the hearing went to press.]

QUESTIONS FROM SENATOR J. BENNETT JOHNSTON

1. What is your opinion of the Administration's decision not to proceed with AVLIS?
2. What effect does this decision have on the ultimate success of a government corporation? Will the corporation be able to "catch up" on AVLIS deployment and be able to recapture uncommitted sales?
3. In your opinion, how soon must AVLIS be deployed in order to revive the enrichment enterprise?
4. Will DOE or a corporation be able to meet that time schedule?

QUESTIONS FROM SENATOR MALCOLM WALLOP

1. Last year in testimony before this Committee you supported the enactment of comprehensive legislation to restructure DOE's uranium enrichment enterprise in order to assure its economic viability.

(a) Would you agree that that need is even more critical today?

(b) How critical is the timing of enactment of such legislation to the future of the enterprise?

2. In the May 1990 financial assessment that you prepared for the Department of Energy you stated that the availability of supply of Soviet SWU's poses a significant threat to the DOE uranium enrichment enterprise's market share and prices.

Material furnished the Committee by DOE estimates that the Soviet Union has at least 3 to 5 million SWU's available annually for export—most of which will be targeted on the U.S. market. By comparison, three million SWU's constitutes about one-fourth of DOE's current annual SWU production.

(a) What is your estimate of the inventory the Soviet Union has available for sale?

(b) What would be the effect on DOE's enrichment enterprise if the Soviet Union was to dump three million SWU's onto the international market?

(c) Do you believe that the Soviet Union has the capability of supplying virtually the entire market for enriched uranium?

(d) Do you agree that because the Soviet economy is non-market based the price they are willing to accept for enriched uranium is driven solely by their desire for hard currency and bears no relationship to the costs of production?

(e) Is there any reason to believe that if DOE were presently able to lower its prices to be competitive on the spot market the Soviet Union would not simply lower its price further to retain their share of the market?

3. Your financial assessment recommends that DOE purchase Soviet SWU's under an agreement that would limit additional Soviet sales.

(a) Please explain how such an arrangement between DOE and the Soviet Union would benefit DOE.

(b) Given its need for hard currency, what motivation would the Soviet Union have to enter into such an arrangement limiting their sales?

(c) If there is the flag swapping on enriched uranium in foreign countries that you have described in your assessment, how could DOE ever be sure that the Soviet Union is limiting its sales?

(d) What effect would this arrangement have once DOE's existing long-term contracts begin to expire?

4. The long-term contracts under which DOE sells enriched uranium begin to expire in 1995. There has already been evidence that DOE's customers will opt for the lower prices for enriched uranium either on the spot market or under long-term contracts with the Soviet Union.

(a) If the Soviet Union has virtually an unlimited supply capability coupled with no concern for cost recovery, is there any reason to believe that it will not keep its prices sufficiently below those of DOE or any other competitor so as to capture as much of the market as it desires?

(b) The goal of S. 210 is to make our domestic enrichment enterprise more competitive. In your opinion, how would the new corporation cope with the competition from the Soviet Union?

(c) Do you agree that DOE's existing customers would have no motivation to continue purchasing from DOE even if the enterprise is restructured if they can purchase enriched uranium elsewhere at considerable lower prices?

(d) In your judgment, what effect would a requirement that utilities purchase a specified minimum of their enriched uranium from a domestic supplier have on the market and on domestic prices?

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